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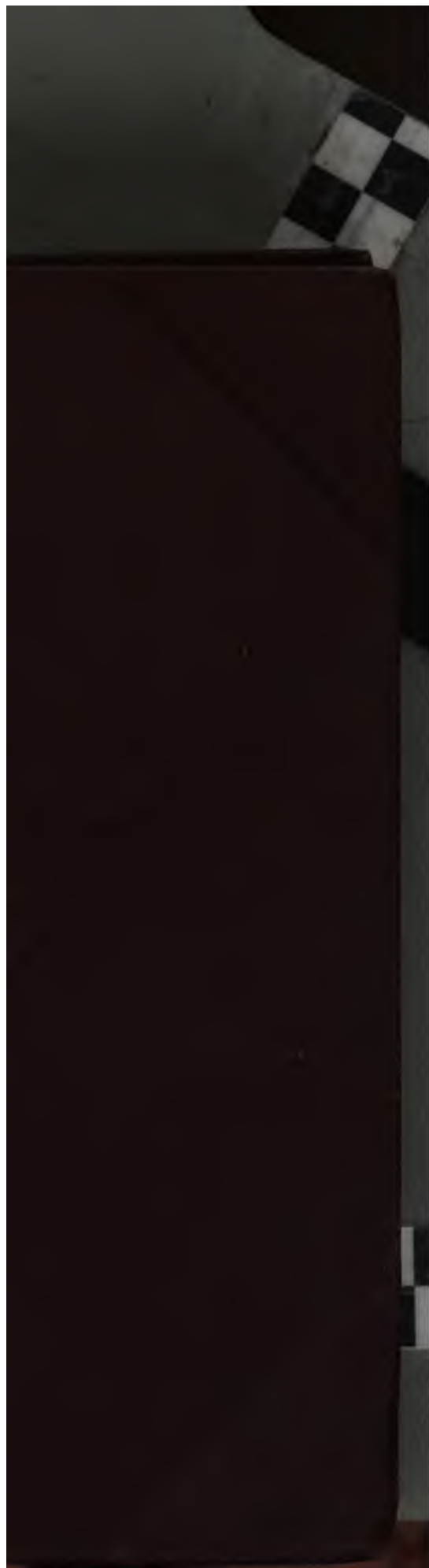
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THE
PATHOLOGY, DIAGNOSIS, AND TREATMENT
OF THE
DISEASES OF WOMEN

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LATERIFLEXION, LATERAL DISPLACEMENT AND ALTERNATING ANTE- AND RETROFLEXION OF THE UTERUS.

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ALTERNATING ANTE- AND RETROFLEXION.—Nature of these Cases—Condition of the Tissues of the Uterus—Treatment, General and Mechanical.

LATERIFLEXION OF THE UTERUS.

As a general rule flexion of the uterus is very decidedly either forward or backward, although it is common enough to find that the inclination of the uterus is a little to one side, the flexion not being exactly in the middle line. But in some few cases it is found that the flexion is very markedly in a lateral direction. I find, on referring to my case-books, that during six years the uterus was in a condition of decided lateriflexion in three cases—not a large number, and showing that the condition is a rare one. The relation of the uterus to the broad ligaments, and its lateral fixation by these structures, prevents lateral displacement.

Of the three cases referred to, one was a single lady, aged 24, who had been thrown from a horse a year before applying for advice, since which she had been subject to considerable pain and incapacity for locomotion. In the other two cases there was no history of a severe accident: one patient was 46 years of age, and the displacement was of long standing; the other was only 18, and had walked excessively since her marriage, two years previously.

I have seen other cases in which the uterus was ante-flexed and distinctly inclined to one side; but these are not included in the above category.

The diagnosis of these cases can only be certainly made by means of the sound. [We rarely use the sound for this purpose. The bi-manual method is alone sufficient.]

Treatment.—The treatment I have found successful consists in the employment of the sound, whereby the uterus is replaced, and a careful positional treatment. If the uterus is inclined to the left side the patient should lie principally on the right. The horizontal position is of

course requisite. As regards the use of pessaries in such cases, it is not easy to adjust one which shall carry out the indications. When the uterus is decidedly in a state of lateriversion, with slight inclination forward, a cradle pessary can be fitted so as to meet the difficulty. For this purpose the crutch cradle pessary should be so bent that the crutch projects more backward than usual on the side to which the uterus inclines. The stem pessary would undoubtedly be the best instrument to employ when the uterus is very decidedly bent to one side.

LATERAL DISPLACEMENT OF THE UTERUS.

I have seen a few cases in which the uterus without being flexed was displaced very decidedly from its median position in the pelvis, this condition being the result of an accident or fall and giving rise to protracted and obscure suffering.

Thus in one case a young lady fell down stairs, broke her arm, and was laid up for some time with it, but when she attempted to walk found it difficult and painful to do so, and she became affected also with "hysterical" symptoms. The uterus was found packed away, as it were, in the left posterior corner of the pelvis, where it had evidently lain since the injury. By positional treatment the uterus was brought to the middle of the pelvis with satisfactory results.

Another patient had sustained a severe fall on the floor from sitting down when there was no chair. Obstinate pain in the back resulted, and it was subsequently found that the uterus was driven backward close to the sacrum, and a little to one side.

ALTERNATING ANTE- AND RETROFLEXION.

A very important and interesting class of cases is that in which the flexion alternates backward and forward.

These cases are by no means rare.

I first became acquainted with this alternating variety of flexion eight years ago while attending a case which proved to be one of this kind and which was under observation for a considerable time. It was very difficult to cure, and the facts observed from time to time in connection with it fur-

nished me with information which has been found very valuable in other similar cases.

These alternating cases are typical cases of the "soft" uterus. This softness is the result of malnutrition. The case above alluded to was that of a lady threatened with phthisis, and in a low state of nutrition generally. There was very intense uterine dyskinesia; complete inability to walk more than a few yards. The uterus was found retroflexed. Treatment for this retroflexion was for a time successful, but it afterward failed and it was then found that the uterus was ante flexed. Again, a fresh adjustment was made, but it was found that the slightest pressure in front produced retroflexion, while the slightest pressure behind the uterus produced ante flexion. The uterus was so weak that it had no power to keep straight. After observing these oscillations long enough to be aware of the true nature of the case, a peculiar shaped pessary was applied which had the effect of simultaneously giving pressure in front and behind the uterus. When this was got into proper working order the patient was able to walk and a cure was eventually obtained by supporting the uterus and carefully improving the general health by suitable dietary.

I may mention another case which has been under observation for the last eight or nine years. A young married lady was found suffering from ante flexion, coupled with very great debility—chronic starvation. The uterus was treated successfully and the patient had her first child about two years afterward. After the pregnancy was over the uterus became again troublesome and a cradle pessary was again required; a second pregnancy with subsequent recurrence of the flexion, and a third with similar result; a fourth pregnancy occurred after a longer interval, and after it had ended satisfactorily the patient again came to me in consequence of feeling ill and in pain. On this last occasion I found to my surprise that the uterus was not ante flexed, as I expected to find it from former experience, but retroflexed. This extremely interesting case, with all the circumstances of which I am perfectly familiar, offers an example of a uterus originally very soft and which has never, spite of repeated pregnancies, become really firm and solid. The case is rare and probably exceptional, but it teaches some valuable lessons.

I have seen at various times a considerable number of cases less marked than those above described, but well

characterized. In some of these cases no internal support was used, the alternating flexion being nevertheless observed to occur. In other cases the alternation followed on the use of a vaginal pessary, a retroflexion changing to an antelexion under the use of a Hodge-shaped pessary, and the opposite result following from the use of a cradle pessary in a case of antelexion. This is a very important circumstance to bear in mind, for a pessary which does its work well and satisfactorily at first may be found afterward not to be acting well. In those cases where this unusual flexibility of the uterus exists the pessary (properly applied) tilts the uterus, not only into its place, but *may* have the effect of producing the opposite kind of flexion.

I have on some few occasions been consulted by patients who have been subjects of retroflexion and treated by the Hodge-shaped pessary by other practitioners, but were still in search of relief. In these instances I have in five or six cases found that the uterus had gone over from retroflexion to antelexion. In one case very great anxiety and trouble had resulted from the supposed impossibility of giving the patient relief, but the true cause was found to be the over-action of the pessary. This over-action may of course in some cases be real, the pessary being worn too long or being too large, but that explanation does not apply to the cases I have now in my mind in which it was certain both that the original diagnosis was right and that the pessary was skilfully adjusted.

These facts offer evidence of the necessity for carefully regulating the action of vaginal pessaries and for ascertaining that they are acting as intended. This can only be done certainly by the careful use of the sound.

If the case be originally one of antelexion and a Hodge-shaped pessary be employed, one effect is very likely to occur—viz., an exaggeration of the antelexion. I have met with cases where this result has been observed, the Hodge pessary having been used under a mistaken notion of the nature of the case.

Treatment of Alternating Flexions.—These peculiar cases require a corresponding peculiar treatment. Probably the difficulty is capable of being surmounted in more than one way. The plan which I have followed in the cases which have come under my notice, and which has been successful, consists in using a pessary which is a combination of the Hodge and the cradle pessary. It might be described as a

cradle pessary with the posterior ring elongated so as to resemble the corresponding part of the Hodge pessary. The accompanying drawing gives a better notion of the instrument than a description. The object of the instru-

FIG. 105.*



ment is to give a support both behind and in front of the uterus, and the pessary in question has been found to fulfil these indications in the cases in which I have employed it.

FIG. 106.†



In some of these cases it is probable that the pessary known as Fowler's pessary would prove serviceable. This is an instrument made of ebonite, and having a conical or funnel

* Fig. 105 shows a profile view of the "alternating" flexion instrument. A should be placed behind the cervix; B corresponds to the vaginal aperture.

† Fig. 106 represents a ground plan of the same instrument,

shape, into which the uterus falls. It is sold in various sizes.

Another instrument which would fulfil the indications required is the stem pessary. I have not employed it, however, in the cases of alternating flexion which have come under my notice, having found the arrangement above described to answer extremely well.

In conclusion it must be stated that no amount of precision and mechanical skill will be effectual in giving relief in these cases, unless it be conjoined with great care and attention in regard to the strengthening of the uterus. Careful and incessant nutritional treatment for as much as a year or more will be required in a case of alternating flexion in order to really cure the disease. If this latter element in the treatment be neglected, the uterus will, after the removal of the pessary, relapse into its former troublesome condition.

CHAPTER XXVI.

INCISION AND DILATATION OF THE CERVICAL CANAL OF THE UTERUS—STEM PESSARIES.

INCISION OR DIVISION OF THE OS AND CERVIX UTERI.—Various Methods of performing the Operation—Means for maintaining the Canal open afterward—Dangers of the Operation—Treatment of Cases of Imperforate Os Uteri.

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STEM PESSARIES.—Various Kinds—Simple Stems—Stems with supporting Vaginal Framework.

INCISION OR DIVISION OF THE OS AND CERVIX UTERI.

Incision or division of the os and cervix uteri is an operation practiced chiefly for the relief of dysmenorrhœa or for the cure of sterility. But it is also a means of facilitating the rectification of the shape of the uterus in chronic cases of distortion of the organ.

In order to enlarge the calibre of the uterine canal, Sir J. Y. Simpson first employed a metrotome caché, by means of which he effected an incision extending up to the os in-

ternum, first on one side and then on the other. The knife was guarded until the instrument had been introduced sufficiently far. Various modifications of this instrument have been employed. Dr. Greenhalgh's metrotome is double-bladed, and by it a bilateral section of the cervical canal is made, rather wider below than above. Dr. Barnes uses scissors to open up the lower part of the canal. Mr. Coghlan's metrotome is adapted for making an incision of the internal os; it has a probe point, and is then flattened out with a short cutting edge on each side. In some cases a careful use of a very small probe is required to inform us as to the direction in which the cervical canal goes, and a narrow director is now and then useful in guiding the knife when we are dealing with the internal os uteri.

It is very desirable to limit the extent of the incision at the external os uteri as much as possible. There is no doubt that it is unwise to divide the cervix widely, as was formerly done; and it is only necessary to incise the os uteri externum to such an extent as to admit of free access to the internal os uteri, and of the manipulations required for incising it, and inserting material for maintaining the aperture patent. There are cases in which the os externum is so small that the wall must be cut quite through to a certain extent.

The external os may be incised by a pair of curved scissors or by Sims's knife, and the internal os by the latter instrument. During the operation the patient is on the side in the Sims's position, the Sims speculum being used, and the os drawn down by the tenaculum or hook.

After the incision a small pyramidal-shaped piece of lint, steeped in perchloride of iron and glycerine, is carefully packed into the cervix, and to retain it *in situ* a piece of wetted bandage a yard or so in length is packed in the vagina. The bandage is drawn away at the end of twelve hours, but the cervical plug remains for two or three days. After removal of the cervical plug an ebonite plug can be inserted. Some operators introduce one immediately after the incision. The difficulty in maintaining the aperture is great, and has been mentioned by all who have performed the operation. After a month or six weeks the wound may become greatly contracted, but the canal does not usually return quite to its former dimensions.

The ebonite stem is preferable to other methods for preventing the canal from closing; for to maintain the patency

of the canal at the situation where the contraction mostly happens—viz., at the internal os—is often a matter of extreme difficulty. A stem of ebonite acts in a double capacity, keeping the canal straight as well as open.

The dangers of incision of the cervix uteri* are as follows:

1. Hæmorrhage is liable to be very considerable when the uterus is deeply incised; but this is not likely to occur when the depth of the cut does not exceed half the thickness of the uterine wall. Cases in which hæmorrhage has been troublesome are probably cases in which incisions have been made deeper than this. The bleeding is generally capable of easy control by means of the plug.

2. The danger of septicæmia is the chief one. It is very slight when ordinary precautions are taken. Dilatation appears to be dangerous after a cutting operation, and it is probably most dangerous when the incised surfaces are covered with puriform secretion. It may be connected with undue depth of the cutting operation. In any case it is no doubt dependent on entrance of putrescent material from the canal of the cervix into the cut vessels (veins or lymphatics) of the uterus. The free use of carbolized oil in manipulating the cervix uteri, and especially the avoidance of dilatation during the few days after the operation, are recommended.

Treatment of Cases of Imperforate Os Uteri.—In some rare cases the os uteri is imperforate congenitally, and there is no outlet for the menstrual fluid. And the os uteri may become occluded after labor, from effects of operations, etc. Under these circumstances, also in cases of physometra, we may be called upon to evacuate the contents of the uterus artificially.

* Dr. Montrose A. Pallen (1877) gives a valuable summary of the subject of incision and division of the cervix uteri for dysmenorrhœa and sterility, in "Am. Journ. of Obst.," vol. x. p. 364. It appears that Dr. Sims has since 1874 adopted a plan of incising the cervix, and then dilating it directly after incision by a dilator; after which operation he inserts a plug of glass, ebonite, or aluminium into the cervix, which is retained for from two to six days afterward, together with iron cotton. Dr. Pallen states that since 1865 he has himself operated 337 times, the incisions varying in different cases. The results were in fifty per cent relief of the dysmenorrhœa and thirteen to fourteen had children, while a quarter were not benefitted. In three cases cellulitis followed. In two death occurred, but not as a result of the operation. Comparing these results with cases in which Dr. Pallen used tents, it appears that in 150 cases, where tents were employed, two died rapidly of metro-peritonitis, while fourteen had pelvic cellulitis.

In congenital cases, we have to make a communication between the uterus and vagina in the best manner the circumstances may admit. We endeavor to find the os uteri, and not succeeding in this, search is made for the cervix. We may fail in discovering any trace of either, the distension of the uterus having obliterated all traces of it. In such a case a point is to be chosen which is nearest the supposed seat of the cervix, and the opening is to be made at that point, taking care that the instrument used be directed toward the centre of the enlargement, so as not to run a risk of wounding the bladder or rectum. In reference to the manner in which the uterine contents are to be allowed to escape, certain precautions are necessary. It is, I consider, advisable to allow the fluid to escape very slowly. After the first part of the treatment—the evacuation of the fluid—has been gone through, we have to take measures for maintaining the canal of the cervix open. This is not unfrequently found troublesome, there being a tendency to reclosure of the canal, necessitating a new operation. Gradual dilatation by means of bougies or by the use of tangle tents is most appropriate under such circumstances.

The puncture of the tumor from the rectum is only admissible in cases where the other operation from the vagina is absolutely impracticable.

In cases of acquired occlusion of the os uteri or cervical canal, the canal is to be opened and made pervious by a carefully performed operation, which must be determined by the nature of the case. In many of these cases it is possible to find out the track of the old canal by means of probes, and, if this can be done, it renders further procedures more easy. A small canula and trochar, long enough to reach the uterus, is sometimes necessary to evacuate the fluid. The canal once opened the occasional use of the sound, or of graduated metallic bougies, is required to preserve its patency.

DILATATION OF THE CANAL OF THE UTERUS.

Dilatation of the uterine canal is a procedure required in a certain number of cases and for various reasons. It is an operation of delicacy and not seldom attended with considerable difficulty. And it is a procedure which is not unattended with danger.

The objects for which the operation is undertaken are, as already remarked, various: To facilitate introduction of a stem-pessary, to relieve dysmenorrhœa, to cure sterility, to explore more completely the uterine cavity, as a help toward the cure of ante flexion or retro flexion of the uterus, etc.

It will be well to speak in the first place of the dangers of the procedure. The great danger is the setting up of the pyæmic process, or local cellulitis. Sponge tents, under certain circumstances, cause rapidly fatal pyæmic disease and peritonitis; but other dilating agents are also capable of producing serious or even fatal illness of a similar kind. Abrasion of the cervical canal, or a partly healed wound of the same, appears to favor occurrence of dangerous symptoms. A wound, or laceration, or contusion of the cervical canal, in the process of dilatation may lead to the same result, and this is more especially liable to happen when puriform secretions are lying either in utero or in such a position that they obtain ready access to the abraded or lacerated surface. The action of a sponge tent is rapid, and the stretching of the cervix produced is considerable; the sponge, if not rendered antiseptic, very speedily undergoes a putrescent change, and after a few hours is generally fœtid. The expanded and partly abraded surface of the cervix is then in contact with the putrescent product, absorption occurs, and serious symptoms set in forthwith—at least, this result may occur. Introduction of a second sponge tent immediately on withdrawal of the first, especially if the first has been allowed to remain as long as two days, is still more likely to prove prejudicial. Repeated slight abrasions or lacerations of the cervical mucous membrane, liable to be produced by use of bougies or by metallic dilators, may give rise to similar results. The presence of a wound or abrasion of the cervix seems, so far as my experience goes, to be the predisposing condition; but the presence of an exciting cause such as putrescent or puriform fluid at the spot so abraded or wounded, appears to be equally necessary.

In illustration of the foregoing statements, it may be mentioned that at a discussion on sponge tents at the Philadelphia Obstetrical Society in December, 1873, various cases of death were mentioned by speakers: (1) Death after insertion of a third sponge tent, the last retained two days, patient having moved contrary to order; (2) death

after a second tent, interval being two days; (3) death after a third tent, interval between each one day; (4) death after use of three sponge tents.

Sponge tents are unequalled for certainty and rapidity of action, but must be used with great care. One operation appears to be safe enough, but not so a repetition of operations. Sponge tents are sometimes antisepticized before being used, but it seems difficult to render them certainly aseptic. Sponge is certainly better adapted for cases requiring quick and extensive dilatation than for cases when slight dilatation only is needed. Thus it is not easy to thread the internal os as a primary operation in cases of acute flexion—the stiffness of the tent becoming often lost before it has passed the narrow part of the canal. When sponge, or indeed any like material, is employed, carbolized injections should be always freely employed.

Sea Tangle.—Tents of this material, first introduced by Dr. Sloan of Ayr, have been frequently used during the last few years. They are tolerably manageable, and very powerful in action. The material is very hard when dry, and can be shaped by a knife. Tents of this material are sometimes made hollow, as first suggested by Dr. Greenhalgh, to induce more rapid swelling. When the uterine canal is much flexed or tortuous, the introduction of the tent is not easy unless it be a little softened before introduction. And under any circumstances the operation is one requiring some little skill and attention in order that it may be successfully carried out.

In cases where it is required to dilate the cervical canal extensively, bundles of sea-tangle tents may be employed according to Dr. L. Atthill's suggestion. Such a dilatation may be required in order to obtain access to an intra-uterine polypus or fibroid tumor.

The slippery elm and tupelo are other materials from which uterine tents are constructed.

In introducing a sponge tent, the lateral Sims's position is the best, the Sims speculum being employed and the os drawn down and fixed by a hook. This has also the effect of somewhat straightening the uterus and thereby facilitating entry of the tent. An instrument such as that shown in Fig. 107 is a good sponge tent introducer. Six or eight hours is the proper time for the action of the tent: it must be then removed.

Another good tent introducer is Fig. 108, in which a me-

FIG. 107.



FIG. 108.



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tallic pointed needle supports the tent during introduction, and is readily detached from it when it is well placed in the cervical canal.

[The forceps are preferable because the tent can be firmly held at any angle.]

In order to procure proper dilatation of the uterine canal, the tent must be made to pass through the internal os uteri and be there maintained while it is at work. Otherwise it is found, perhaps, that the tent has slipped and no material advance is made. The tent should of course be long enough to reach just beyond the internal os; and it should project a short distance into the vaginal canal. It should be always firmly attached to a silk or strong hemp ligature for withdrawal.

Another method of dilatation is that known as Mr. Lawson Tait's,* consisting in introduction of a series of three box-wood conical plugs into the os uteri, and applying pressure thereto from the outside by means of an india-rubber elastic band. The first plug is removed after a few hours when it has done its work, and is replaced by a larger one; the second by a third. In this way the canal is gradually dilated. The plug is kept in place by a vaginal stem which screws on to the plug, and the elastic band is attached to this stem outside the vagina. The elastic thread is fixed to a bandage encircling the waist.

Metallic Dilators.—These are undoubtedly convenient and efficacious in cases where slight dilatation only is required, and are also very useful in the treatment of chronic flexions, especially ante flexion. A set of metallic bougies regularly graduated, very applicable for these purposes, are now kept by surgical instrument makers. There are various metallic dilators—Dr. Marion Sims's, Dr. Priestley's, Dr. Ellinger's, etc. After having tried several of these, I have found the most serviceable one which I had constructed by Coxeter some few years since, which is a modification of one originally made for the late Dr. Rigby by Mr. Ferguson of Giltspur Street. It is on the principle of a glove-stretcher, and can be inserted wherever the ordinary sound can be made to pass. It possesses a knob like that of the ordinary sound to indicate the depth of insertion, and should also have a slight groove cut on the opposite side for similar purposes. After insertion, the two blades are opened by

* *Lancet*, November 1, 1879.

FIG. 109.*



FIG. 110.*



* Fig. 109: Graily Hewitt's uterine dilator (reduced). Fig. 110 shows a lateral view of the part of the instrument which is introduced into the cervical canal (actual size).

INCISION AND DILATATION OF CERVICAL CANAL. 365

FIG. 111.*



FIG. 112.*



* Fig. 111 represents Dr. Priestley's dilator.

† Fig. 112 represents Dr. Marion Sims's dilator.

a screw slowly and deliberately, and the force exercised is expended at the spot where it is most needed—*i.e.*, the os

FIG. 113.*

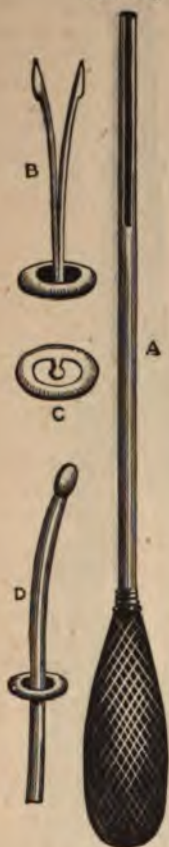


FIG. 114.†



uteri internum. It is an instrument of very great power, and should therefore be employed very carefully. It has

* Fig. 113 represents Dr. Chambers's stem and apparatus for introduction. ("Obst. Jour.," vol. i., p. 2.)

† Fig. 114 represents Dr. Granville Bantock's stem and mechanism of introduction. ("Obst. Journ.," vol. xiii., p. 1.)

the great advantage that it does not slip out of the canal. I employ it frequently, but am careful to do only a very little at a time with it, and generally to allow an interval of two days between each dilatation—that is to say, in cases where the instrument is used for the purpose I most commonly employ it, in the treatment of a chronic flexion, and with the view of permanently straightening a tortuous and contracted canal.

UTERINE STEMS.

Uterine stems may be divided into two classes—(1) Those which are intended to be used alone, and (2) those which are used in conjunction with a supporting vaginal disk or framework.

Simple Stems.—These are generally provided with a small button-shaped portion, which, when the stem is in position, rests on the vaginal floor.

With few exceptions the material employed has been rigid—ebonite (hard rubber), metal of various kinds, and glass (Dr. Meadows).

Various Shapes.—Dr. Chambers recommends a modification of the late Dr. Henry G. Wright's stem. It is a vulcanite stem, double; but the two arms are kept together until the stem is inserted by the stylet. Withdrawal of the stylet allows the arms to separate, and the opening out of the two arms prevents the escape of the stem.

Dr. Granville Bantock's stem is partly of vulcanite, and the intra-uterine part consists of two arms of German silver; these latter spring apart and retain the stem after introduction.

Dr. Clement Godson's stem is of aluminium, made in five sizes; it is retained by a spring within the tube, which projects at apertures near the extremity and within the uterus.

Mr. Lawson Tait's stem is a galvanic instrument with a slight projection of india-rubber to act as a retaining agent.

Dr. Alfred Meadows's stem is of glass with a small button of ebonite.

A quite elastic stem, composed of india-rubber tubing, was recommended by the late Dr. Squarey.

Stem with Supporting Vaginal Framework.—The instrument here figured, which has been sometimes termed the "pad-lock" pessary, was devised by myself, and described in the last edition of this work (1872). Fig. 117 shows at B the

stem of ebonite, one and a half inches in length, the lower portion hollow to admit the inserting stylet. At A is shown the supporting vaginal disk, of an oval outline, having a socket into which the stem fits when *in situ*. The stem is intended to fit rather loosely in its socket. The plug or stem which I have employed for this purpose is one and three quarter inches long, conical in shape, with a bulbed

FIG. 115.*



FIG. 116.†



termination. The diameter varies; the smallest has a diameter of three sixteenths of an inch at its bulbed termination. The stem ends below by a broad basis half an inch in diameter, and is perforated for a short distance for facility of introduction, the ordinary uterine sound fitting into the perforation, and acting as a handle. The stem is

* Fig. 115 shows Dr. Clement Godson's stem. ("Obst. Journ.," vol. xvii., p. 286.

† Fig. 116 represents Mr. Lawson Tait's stem.

retained in its place—for it has a great tendency to slip out—by the oval support, made to fit the vaginal canal.

In order to introduce the instrument, the sound, as a handle, is passed through the collar of the vaginal framework, and on it is placed the ebonite plug. After the plug is placed *in situ*, the ring is made to slip up the sound until finally the little plug finds its place in the supporting collar. The sound is then withdrawn and the work is done. Only those who have attempted to introduce rigid plugs into a contorted or contracted canal, and to maintain them there,

FIG. 117.*



will appreciate the necessity or usefulness of this contrivance, which I have found to answer extremely well. This instrument is made by Coxeter & Son. I have found that it works well in practice, and it has been very largely employed by Dr. W. Murray of Newcastle-on-Tyne; the vaginal part requiring to be generally one and three eighths inches by two and three eighths, but sometimes smaller.

Dr. Routh's instrument is on the same principle. His stem is articulated to a cross-bar attached to a Hodge pes-

* Fig. 117 represents Graily Hewitt's stem pessary (so-called "pad-lock" pessary). B is the stem (actual size); A shows the stem fitted into the supporting vaginal framework (reduced in size). As at present made the framework is more flattened than it here appears.

sary, its position in regard to which can be regulated by a screw.

Dr. Wynn Williams's instrument is another modification of the same principle. In his pessary the vaginal framework is of wire, covered with india-rubber, and admits of lateral compression. It has an india-rubber diaphragm perforated with holes, the stem is set near the distal part of the vaginal supporting framework. In a more recent, improved form the stem rests in a cup-shaped depression in

FIG. 118.*



the diaphragm. It is very easily applied and is a very ingeniously constructed instrument.

Dr. Meadows's instrument is on a like principle, and also allows a certain degree of motion of the stem on the framework.

Dr. Thomas describes a combination of stem with an anteversion pessary which he has found useful in certain cases.

* Dr. Wynn Williams's stem pessary. "Obst. Trans.," vol. xiv., p. 308.

CHAPTER XXVII.

ASSOCIATION OF PREGNANCY WITH FLEXIONS OF THE UTERUS.

GENERAL OBSERVATIONS.—Frequency of Abortions in such Cases: Reasons for this—Difficulty of Expansion of the Uterus.

RETROFLEXION AND RETROVERSION OF THE GRAVID UTERUS.—1. Flexion before Pregnancy occurs—Natural History, Symptoms, and Effects. 2. Flexion occurring after Pregnancy has commenced—Diagnosis—Treatment—Reduction by Positional Treatment; by other Means—Treatment of the Bladder.

ANTEFLEXION OF THE GRAVID UTERUS—a Frequent Condition and a Frequent Cause of Abortion.—1. Cases where the Antelexion occurs after Pregnancy has begun—2. Antelexion precedes the Pregnancy—History of these various Cases—Reasons why the Complication is not generally recognized as an important one—Diagnosis—Severe Nausea a Common Symptom—Author's Views on this Subject—Retention of Portions of Ovum another Result of the Flexion—Treatment in various Cases according to severity of the Case—Elevation of the Uterus, how to be effected—Relief of the Sickness—*Modus operandi* of the Treatment—Dr. Copeman's Method—Dilatation of the Cervix for Cure of Sickness discussed and explained.

SUBSEQUENT TREATMENT.

The subject of the association of flexions with pregnancy is a very interesting and important one. Retroflexion of the uterus associated with pregnancy has been long known; but concerning the association of antelexion with pregnancy little has been published.

When the uterus is in a flexed condition pregnancy may not occur at all. When pregnancy does occur under such circumstances, the result varies in different cases. It is necessary to point out, and to endeavor to explain, the various results observed in different instances.

If the flexion be slight in degree and not of long duration (say not over two years), pregnancy may proceed to the full term. It is generally, however, noted in such cases that the early part of the pregnancy is attended with a troublesome amount of nausea, and there may have been other discomforts observed as soon as pregnancy set in.

When the flexion is more chronic or more severe in degree, it generally happens that an abortion occurs during the second, third, or fourth month.

The pregnancy may begin before the uterus becomes affected with flexion. There are instances in which the

uterus, having been in a normal condition, becomes gravid, and soon after falls into a flexed condition.

In cases where abortion happens during the early months of pregnancy, we cannot tell without a careful inquiry into the previous history and other facts whether the flexion followed the pregnancy or preceded it.

Abortion is a very frequent result of the association of pregnancy with uterine flexion, and such association is really the most common of all the causes of abortion.

The reason why abortion is so liable to occur in cases where the uterus is flexed appears to be, principally, the interference which the distortion of the uterus offers to the proper expansion of the cavity. But the distortion would have very much less influence than it is found to have if the body of the uterus were free to move. Owing to the action of gravity on the one hand, and the hindrance offered to the ascent of the uterine fundus by the sacral promontory (in cases of retroflexion), and by the symphysis pubis (in cases of antelexion), the uterus is, however, not free to move and expand in the normal manner.

If we suppose the uterine walls to be in a condition of health, the conditions just mentioned above would be the only ones to be considered. Given freedom to expand and space in which to expand, there would be no reason why the uterus, though bent upon itself, should not unbend, expand, and do its proper work in the ordinary manner—the above difficulties being removed.

But in many cases we have further obstructive conditions. When the flexion is a chronic one, the uterine walls are liable to become changed in thickness, and in other respects. Too thick in some parts, unduly thin in others, corrugated, compressed, sometimes constricted on the peritoneal surface by adhesive bands,—under such circumstances the expansion of the uterus is a matter of difficulty, and an abortion may result at an early period of the pregnancy.

There are good reasons for believing that in some cases the difficulties in the expansion of the uterus, though not immediately resulting in expulsion of the ovum, produce interference with the placental growth in such a way that premature labor and delivery of a dead child occur later on.

The hardening and compression of the uterine tissues resulting from flexion are more particularly liable to be present near the *os uteri internum*, and there are various curious

clinical facts hereafter to be mentioned which are only to be interpreted by supposing a condensation of the uterine tissues to exist at this situation. If the puckering and condensation be considerable, it is evident the uterus may be so held and maintained in its distorted condition that expansion of the organ is difficult. The difficulty in question finds a solution, in many instances, in the occurrence of abortion.

But a further result of the existence of acute flexion is probably actual disease of the decidua vera, and consequent abortion brought about in this way. The growth of the decidua, which is a part of the natural process of pregnancy, cannot proceed normally at certain situations, and, as has been shown by examination of actual specimens, it may become actually disorganized, and thus lead to the occurrence of abortion. Such is probably the explanation of two very interesting observations made by Dr. Slavjansky, and published in 1873, entitled "*On Endometritis Decidualis Chronica as a Cause of Abortion in some cases of Displacement of the Pregnant Uterus.*" *

All cases of uterine flexion in which pregnancy occurs are not followed by abortion, but it is mechanically almost impossible for pregnancy to continue if the flexion be unrelieved. As a matter of fact, many cases of this kind are so relieved; the uterus becomes straight by expansion. In others the flexion remains, and as the uterus goes on expanding the result is in many cases to actually increase the flexion.

RETROVERSION AND RETROFLEXION OF THE GRAVID UTERUS.

Desgranges (1715), Gregoire (1746) and William Hunter (1754), described cases of "retroversion" of the gravid uterus. Gooch in his lectures (quoted by Ashwell, "*Diseases of Women*," p. 597) gives a full narrative of William Hunter's celebrated case. In this case the patient was four months pregnant, when she began to suffer from retention of urine. This was relieved by catheter but again occurred. Mr. Wall, who was the medical attendant, recognized the case as one like that published by Gregoire. He tried to reduce the retroverted uterus, but failed, and then sent for William Hunter, who recognized the nature of the case also, and

* Paper read before the Obstetrical Society of Edinburgh, July, 1873.

attempted reduction unsuccessfully. There was obstinate constipation. The patient died in a few days. A second case, it appears, occurred soon after, and the patient could pass neither urine nor fæces. The catheter could not be introduced; it was proposed to puncture the bladder; the patient refused, and at length felt something burst, which proved to be the bladder, and she expired in a few hours. In both these cases the state of the uterus was substantiated by an autopsy.

In Ashwell's work will be found recorded several of the most interesting cases of retroversion of the gravid uterus which have been observed since William Hunter's case, including some noted by himself. These cases made evident the great importance of the retention of urine and fæces as clinical features of such cases; for death was usually found to occur either from irritation, by inflammation involving the peritoneum, or by rupture of the bladder. Great relief always occurred when the bladder could be emptied, and in some cases, when the disease was detected early, rectification of the uterus followed the careful daily evacuation of the bladder. On the other hand, evacuation of the bladder, when effected, did not always ensure the possibility of reduction of the displacement. Thus in one case (Mr. Wilmer's) the bladder was relieved, but death soon occurred, and the uterus was found so firmly wedged in the pelvis after death that it could not be raised up till the symphysis pubis had been sawn away. In Dr. Ashwell's time he found reason to blame the little importance attached by authorities to replacing the uterus, and he forcibly directs attention to the advisability of reducing the displacement, and at as early a period as possible. He also gives directions for accomplishing it which we have hardly improved upon since his time. Ashwell used and recommended careful pressure upward, the patient being in the knee-and-elbow position.

The pressure was to be made by the fingers in the vagina or, if that plan did not answer, in the rectum. Denman, followed by Blundell, also employed the knee-and-elbow position, and speaks of it as sufficient, if kept up sufficiently long to procure the reduction of the uterus, provided that the bladder be kept empty. But Ashwell disbelieved the efficacy of this positional treatment alone in severe cases.

As to the difficulty in introducing the catheter sometimes

found to occur, Ashwell states that a long flexible male catheter can always be employed without delay or suffering. Should it be impossible to use the catheter the suprapubic puncture of the bladder is required. In a case related by Ashwell eleven pints of ammoniacal urine was obtained by a long catheter, the uterus was reduced, but abortion and death in five days followed.

An interesting paper by the late Dr. Phillips is recorded in vol. xiv. of the "Obstetrical Transactions," "On Retroflexion of the Uterus as a frequent cause of Abortion." Dr. Gervis also communicated some most instructive cases to the Obstetrical Society, recorded in vol. xvi. of the "Obstetrical Transactions." The discussion which followed the reading of these papers may be consulted with advantage.

The dislocation is primary or secondary. Formerly it appears to have been taken for granted that it was always a primary affection. The late Dr. Tyler Smith was one of the first to point out that the flexion frequently precedes the pregnancy. It is now well known that this view is accurate so far as a large majority of cases is concerned. But, on the other hand, the dislocation is also undoubtedly primary in some few instances.

In the chapter on Retroflexion of the Uterus some account has been given of the frequency with which abortions occur in cases of this disease.

1. *Cases in which Flexion precedes the Pregnancy.*—The natural history of cases when pregnancy occurs in a case of retroflexion is as follows: Pain is usually felt more or less from the commencement, or there is at all events a sense of discomfort, bearing down and weight, and inability to move without producing pain. Difficulty in defæcation, due to the pressure of the body of the uterus on the rectum, is commonly observed. Nausea, sometimes to a most distressing extent, is commonly present. In some cases it is the most severe of all the symptoms. (The connection of obstinate vomiting with existence of retroflexion of the gravid uterus will be discussed later on.) As the pregnancy advances these symptoms increase in severity, and it is found difficult to pass urine, the bladder is liable to become distended, and there is retention. In not a few cases, the fact that the patient passes urine very often disguises the real nature of the case and conceals the existence of retention. By the third month, the uterus, being now of considerable size, exercises great pressure on all the organs and

structures near it. At this time, or before this time in a few instances, nature shows herself equal to the emergency and the uterus rises upward, the posterior rotation diminishes, and relief of the symptoms follows. But if the patient be not thus relieved naturally, and if its true nature be not understood, one of two events results—either (1) the uterus throws off the ovum and abortion occurs; or (2) the uterus continues to expand, though under increasingly unfavorable conditions. The whole pelvis is occupied by the uterus. The cervix is tilted high up above the symphysis pubis, and the bladder becomes so much dilated by the retained urine that it may reach to a point above the umbilicus. All the symptoms increase in intensity. The pressure is exceedingly painful, labor-like forcing pains are experienced, the rectum is impassable, the urine escapes in drops only, the ureters probably undergo dilatation, and the pelves of the kidneys also. The sickness may be incessant, the prostration extreme, the pulse quick and small, and irritability alternating with great exhaustion (see chapter on Vomiting of Pregnancy). When this latter condition of things persists up to the fifth month death may result from the accumulation of evils then present: there is fever, quick pulse, gradual prostration, uræmia probably; in some cases rupture of the bladder may occur and destroy the patient. A third course is sometimes observed: the uterus continuing to expand sends an extension upward into the abdomen, and does in fact become partly an abdominal organ; but at the same time the part within the pelvis remains there. The uterus thus acquires a curiously abnormal shape; and in the celebrated case related by Dr. Oldham* no abortion occurred, but the uterus continued to retain this shape until the full term of pregnancy had been reached.

Rectification of the position, as already remarked, sometimes occurs naturally, and if so, it generally happens before the fourth month has been reached. The larger the uterus the greater the difficulty offered to the elevation of the now greatly distended organ, owing to the projection of the sacral promontory. It seems probable that the great distension of the bladder sometimes operates at a critical moment in preventing the rectification. The rectification may occur suddenly or gradually.

The disturbance of the functions of the bladder are among

* "Obst. Trans.," vol. i.

the most serious of the effects produced by retroflexion of the gravid uterus. The distension of the bladder and irritation of its mucous membrane sometimes produce actual exfoliation of the lining, and even when this does not occur the lining may become seriously damaged. The whole lining has in some cases come away in a single piece. When the condition is unrelieved the distension, beginning at the bladder, extends up the ureters and affects the pelves of the kidneys, in some cases causing fatal arrest of the kidney functions. As already stated, rupture of the bladder has occurred in some cases.

Certain peculiarities of the subsequent history require notice. Thus, it frequently happens that when abortion occurs the abortion is an incomplete one, the fœtus being expelled but the membranes left behind. The retort shape of the uterus favors retention of the thickened bag of the ovum, and it may be some days or even longer before it is expelled. Septicæmia may follow.

Further on still, the condition of the uterus is liable to be rendered worse than before. The uterus, having discharged its contents, but being considerably enlarged and retaining its flexed condition, the process of involution is arrested and much additional trouble results; so that a retroflexed uterus which has become impregnated and has thrown off the ovum is liable to become even more flexed, and to give rise to more irritation than before. We sometimes meet with cases where there have been a succession of abortions from this cause, the uterus becoming finally so much distorted that pregnancy ceases to be possible.

2. *The Flexion and Displacement occur after Pregnancy has commenced.*—An accident, such as a fall, or lifting a heavy weight, or a continuous exertion of any kind, may suddenly produce retroflexion of the gravid uterus. There are several well-recorded cases of this kind, where the uterus was apparently in a sound state previously and was evidently afterward displaced. And the displacement may occur as late as the fourth month—possibly even a little later.

Once produced, the symptoms and course of the affection are similar to those in the former class of cases. The chief difference is that the symptoms usually set in with abruptness when the displacement happens after pregnancy has commenced.

The *diagnosis* of the existence of retroflexion of the gravid uterus is most important, for very *serious* results may fol-

low from its being overlooked. The diagnosis is not difficult if a proper examination be made. The tilting upward of the os uteri behind the pubes, the difficulty of reaching it, the evident displacement of the bladder upward, are easily recognizable in most cases. The presence of a large tumor above the pubes when the bladder is distended is rather misleading, for it has been sometimes taken to be the normally placed gravid uterus. A vaginal examination

FIG. 119.*



is imperative; and the rounded tumor of the uterus behind the vagina, reaching down, it might be, close to the vaginal outlet, is easy to appreciate by the touch. The only difficulty is in deciding that the tumor so felt behind the vagina is really the uterus, for it might be due to hæmatocele or to hardened effusion, the result of pelvic cellulitis, or possibly be an ovarian cyst. The use of the catheter would, of course, clear up any doubt as to the nature of the abdominal swelling felt above the pubes. It is to be remarked

*Fig. 119 represents the gravid uterus in a state of retroflexion at about four months of pregnancy.

that the tumor felt behind the vagina may be a little to one side of the middle line, but when the pregnancy is farther advanced it is median.

The *treatment* is not difficult when the malady is recognized at an early date.

Take, for instance, the case of a patient six weeks pregnant, the uterus being retroflexed. Here the treatment consists in gradually pushing up the fundus uteri by pressure from behind, or aiding its ascent by positional treatment alone. If the retroflexion is not of long standing, positional treatment—*i.e.*, avoidance of sitting, occasional knee-and-chest position—may prove sufficient. Generally, however, it is best to insert a Hodge-shaped pessary. A rather thick pessary of the Albert Smith type, is best for this purpose. Such an instrument, properly fitted, is most efficacious. The pessary is worn till the middle of pregnancy, and is then removed. It has happened in my experience many times that patients under treatment for retroflexion have become pregnant while wearing a pessary of this kind. Under such circumstances it has been my practice not to remove the pessary until about the middle of pregnancy.

Taking a case where the pregnancy has advanced to three months, or a little beyond that time, the patient in a condition of much suffering, and the nature of the case only for the first time recognized, the treatment is more difficult. The bladder should be first relieved, and the uterus replaced as soon as the circumstances of the case render it possible. Sometimes it is found practicable to effect the reduction at once. In other cases the uterus has become so fixed by the swollen condition of the tissues adjacent, or so jammed down in the pelvis by the actual size of the uterus, that, without exercising a good deal of force, a rapid reduction is not advisable, or even possible. In cases where the condition of the patient has become a really critical one, and the constitutional and other symptoms of very intense character, it may be advisable to defer operative reduction for twenty-four hours after the use of the catheter. Indeed, there appears to be danger in suddenly removing a very large quantity of urine from the bladder and *simultaneously* attempting the operation of reduction of the uterus, on account of extreme shock liable to be produced.

It remains to be pointed out how the reduction is to be effected. One method consists in placing the patient in

the knee-and-chest position, opening the vagina by the Sims speculum, and allowing air thus to pass into the vagina. Dr. Mundé* records a case where this procedure succeeded at once in the case of a patient eleven weeks pregnant. The same author refers to a case where Dr. Solger, of Berlin, had a like result in a patient four months pregnant. The manœuvre is one first suggested by Dr. Campbell, of Georgia, for reduction of retroversion (non-gravid condition). This method would probably not succeed where there is great swelling and compression of the adjacent tissues. Another method consists in placing the patient in the same position (as practiced by Denman and Blundell), and then exercising pressure on the uterus from the vagina by means of the fingers; or the pressure may be made from the rectum in the same way. A sustained pressure thus made has generally been found to answer extremely well. A round india-rubber air-ball introduced into the rectum and distended with air offers a means of producing continuous pressure in a convenient direction, and it is a method which has also been found successful. Unless the case were one of extreme character, one or other of these methods could be adopted, the pressure being graduated according to circumstances. If too much force be employed there is a risk of inducing abortion. In the very worst cases, the patient being *in extremis*, and the case practically untreated previously, it would be best to evacuate the uterus by drawing down the os uteri with the finger, breaking the membranes, and allowing an abortion to occur.

After reduction of the displacement a pessary should be introduced to prevent possibility of recurrence, the pessary to be removed at mid-term of pregnancy. Various precautions are requisite in the treatment, without which failure may result. The horizontal position must be rigidly maintained in most cases for two or three weeks after the reduction, and it will be a help to direct the knee-and-chest position to be employed five or six times a day during this time. The bowels must be kept in good order by daily enemata. The sitting posture is the worst of all; a little walking is far less objectionable. As regards the pessary to be worn, it is sufficient to refer the reader to the chapter on Retroflexion for information. It is best to employ a

* "Am. Obst. Trans.," vol. ix., p. 292.

pessary rather thicker, though not necessarily larger, than in cases where the uterus is in a non-gravid state.

We have not yet done with the subject. It is found that when pregnancy is over, the uterus has frequently a great tendency to return to the retroflexed state. In one case some time ago under my care, the displacement returned no less than three times after three successive pregnancies. The following was the order of events: retroflexion with gravid uterus, treatment by pessary, removal at mid-term, pregnancy continuing to full term; uterus found returning to retroflexed condition a month after delivery, insertion of the pessary, pregnancy recurring during the wearing of the instrument, removal at mid-term, etc. This is by no means a solitary case, and conveys a lesson as to the necessity for precaution in the subsequent management of such cases.

ANTEFLEXION AND ANTEVERSION OF THE GRAVID UTERUS.

There can be no doubt that the most common cause of abortions is the presence of anteflexion of the uterus. The result of observations extending over many years has at least convinced me of the truth of this statement. That it is not as yet a matter of general professional belief is due to the fact that cases of anteflexion of the non-gravid uterus are often passed over and not recognized as such.

The following is a very characteristic case related by Boivin and Dugès:*

Anteflexion at the Beginning of Pregnancy.—A young woman æt. 24, third pregnancy, the last four years previously, one only at full term. Supposed now to be in second or third month. In a few weeks the os descended lower than usual. The cervix uteri lay on internal surface of coccyx. There was a rounded tumor somewhat larger than the natural size of the fundus uteri, and painful when pressed, situated between the anterior parietes of the vagina and the bladder. It was the body of the uterus directed horizontally forward and recurved at a right angle upon the cervix; a deep sinus into which the top of the finger was easily inserted answered anteriorly to the point of the flexion. This was owing to a firm contraction of the tissues; for upon pushing the body of the uterus the cervix was raised with

* "Diseases of the Uterus" (translated by Heming, 1834), p. 110.

it. The cervix not at all congested, but longer than usual, labia prominent, especially anterior, and its orifice open. In a few weeks pregnancy no longer doubtful; later on cervix found higher up, the body of uterus still inclined on cervix; intervening fold much diminished. No doubt the ante flexion would cease as cervix, expanding, became shortened.

Equally characteristic is the following, related by Ashwell: *

Anteflexion in Early Pregnancy.—The wife of a medical man, æt. 36, in first month of pregnancy fell from a steep stair, the bowels being at the time very constipated. No hæmorrhage, but syncope for an hour. For six or seven weeks she was never free from a heavy bearing-down sensation in front, rendering micturition frequent and painful, defæcation not improved. She was irritable and feverish. The husband thought the womb was retroverted. At the end of third month I found the cervix uteri in its natural position, but not so the fundus, which, in the form of a rounded and solid tumor, was lying forward between the anterior wall of the vagina and the bladder. She complained of pressure at the part when the body was curved. The cervix was elongated, fuller and harder than natural; the os open. I placed the fingers of my left hand behind the pubis, endeavoring in this way to reach the fundus, while with the forefinger of my right hand I tried to draw the cervix downward and forward. I did not succeed, and no further manual efforts were made. Care was taken that she observed the recumbent position for a month. An examination at the sixth month satisfied her husband that the curvature had nearly disappeared, and though not during the pregnancy ever quite free from suffering, she was delivered without difficulty and recovered remarkably well.

There are two classes of cases—(1) those in which the uterus was in a normal condition when the pregnancy began, and (2) those in which the uterus was ante flexed before the pregnancy commenced.

1. *Anteflexion occurring after Pregnancy has begun.*—This is not so common a condition as the following one, but it is by no means rare. A sudden jerk, or blow, or fall, or a long-continued exertion of any kind, may displace anteriorly the gravid uterus. An accident severe enough to pro-

* "Diseases of Women" (1844), p. 596.

duce such a result very frequently has the further result of inducing an abortion; but in some instances the abortion does not happen at the time; the patient feels ill, and as the pregnancy proceeds becomes worse, and very possibly an abortion occurs a month or two later, or, under favorable circumstances, pregnancy ends at the proper time.

2. *The Antelexion precedes the Pregnancy.*—When the antelexed uterus becomes gravid, it frequently happens that it is able to expand, and to rise up out of the pelvis; and so the pregnancy proceeds, at first with more or less difficulty, but later on without difficulty. The obstacle to the elevation of the uterus in process of expansion is less than in the case of the retroflexed uterus. Taking indiscriminately one hundred cases of antelexion and one hundred cases of retroflexion it might be predicted that an abortion would certainly occur more often in the latter class of cases than in the former. The promontory of the sacrum hinders reduction of the retroflexed gravid uterus, but the symphysis pubis does not project so as materially to interfere with the elevation of the antelexed gravid uterus. Thus abortion is not so frequent a result in cases of antelexion as in cases of retroflexion. Yet in regard to *absolute* frequency of abortions antelexion stands before retroflexion. Absolute incarceration of the gravid uterus is not, for the reasons just mentioned, so liable to occur in antelexion as it is in retroflexion. But nevertheless such incarceration does sometimes occur. When the incarceration occurs it is more generally for a limited period only, the uterus either (1) rising up out of the pelvis, or (2) expelling its contents, and in either case the patient becomes relieved. Fatal incarceration, such as may occur in retroflexion, is very rare. Ulrich, however, records a remarkable instance of it. The case will be given in full in the chapter on the Vomiting of Pregnancy. In this case the condition was recognized during life, but the attempts at alteration of the position of the uterus failed. The uterus lay in this case *obliquely* across the pelvis. This oblique position appears liable to occur as the pregnancy proceeds, seeing that the oblique diameter is longer than the antero-posterior, and there is more room, therefore, in the oblique position.

The history of many cases is as follows: The uterus is antelexed in the first or second degree, with first degree of anterior rotation. Pregnancy occurs. An unusual degree of nausea is observed almost from the moment preg-

nancy begins. There is great frequency of micturition. Walking and sitting aggravate both of the latter symptoms. The patient is more or less uncomfortable in other respects. This condition persists up to the middle of the third month. Then the symptoms undergo a change—either improve, or become very much worse. If they improve, that indicates that the bend in the uterus has given way, the organ is expanding more easily, and rising up out of the pelvis. If, on the contrary, there is intensification of the symptoms, this means that incarceration is present. The incarceration is perhaps only temporary; at the end of a few days the expansion does the work required and the uterus rises upward.

In another set of cases the history is as follows: The uterus has been anteflexed for some time. It is hard, rigid, and firm in texture. Pregnancy occurs. Instantly great pain is felt; nausea is very troublesome, so also frequent micturition. The patient continues to go about; the uterus is not kept at rest; at the end of about two months abortion occurs.

In some cases the patient loses blood from time to time, the indication often of impending abortion, but not of course necessarily so.

The difficulty in cases such as above described arises from three sources—(1) The hardened, contracted condition of the uterine tissues (in chronic cases). (2) The downward pressure of the abdominal viscera. When these two difficulties are conjoined the result is more likely to be unfavorable. Experience shows that while in many cases removal of the latter source of difficulty by keeping the patient in the horizontal posture is successful in averting an impending miscarriage, there are others in which this precaution alone is insufficient. (3) A further source of difficulty in some cases is the œdematous effusion surrounding the uterus.

I first became aware of the importance of this subject about eighteen years ago. A lady who had been treated by me previously for anterior displacement became pregnant, and soon after the beginning of the third month presented all the symptoms above described. The uterus was incarcerated in the pelvis, there was considerable œdematous swelling of parts surrounding the vulva, and the uterus was jammed downward behind the symphysis pubis. The horizontal position, kept up for a week or

ten days, relieved the symptoms, and pregnancy proceeded to about eight months when the patient was delivered of a

FIG. 120.*



dead child. Since then I have seen many such cases, and have become impressed with the conviction of the extreme

* Fig. 120 represents anteversion of the gravid uterus at about the fourth month of pregnancy.

importance of ante flexion as a cause of abortion, and have obtained valuable information as to the means of preventing it.

DIAGNOSIS.

This presents little difficulty. The patient is usually known to be pregnant. The pain and distress, together with the nausea, announce that pregnancy is not proceeding normally. Unless an examination be made, it is difficult to say whether retro flexion or ante flexion be present. The position of the os uteri, which is very far back, and the presence of a dense resisting tumor (the ante flexed body of the uterus) felt through the vaginal roof, indicate the nature of the case. The uterine tumor is rounded, elastic, generally symmetrical, and usually in the middle line; but as the uterus increases in size it comes to occupy an oblique position in one of the oblique diameters in the pelvis. This oblique position was present in Ulrich's fatal case, and I have observed it in two cases. A case of extra-uterine pregnancy might present somewhat similar symptoms, but the tumor enclosing the fœtus would be probably unilateral. It must be recollected that in ordinary normal pregnancy the uterine body would be, say at the end of two months, rather readily felt by the exploring finger through the vaginal roof, but it should not of course be jammed downward behind and close to the symphysis pubis. There is a perceptible interval between the uterus and the pubic bones when the gravid uterus is in a normal state at the end of two months.

In the chapter on Ante flexion and Ante version statistics are given as to the frequency of abortions due to this condition of the uterus. The repetition of abortions is a notable feature—thus four or five times in succession the abortion may occur. The success in arresting the occurrence of abortion by treating the ante flexion is one of the many arguments adducible in favor of the above views.

A most interesting feature in cases of ante flexion with pregnancy is the great frequency of obstinate nausea under these circumstances. It may be predicted, almost with certainty, that if a patient affected with ante flexion becomes pregnant she will suffer severely from nausea during the early part of the pregnancy. We now and then meet with cases when the patient is suffering from what is

termed uncontrollable vomiting in pregnancy. These are generally cases of the kind here alluded to—viz., cases of severe ante flexion associated with pregnancy. Not always of ante flexion, because in some cases there is retro flexion; but practically it may be said that ante flexion is chiefly responsible for these cases of severe vomiting.

The special significance of nausea in relation to pregnancy will be found fully discussed in the following chapter.

It may be mentioned that another result connected with

FIG. 121.*



abortion is the *retention of the ovum in the uterus* after its death. For instance, a patient has a miscarriage due to ante flexion: the ovum dies and the patient loses perhaps a great quantity of blood. In a certain number of these cases the ovum will remain in the uterus a considerable number of days, and the reason it does not come away is that the shape of the canal prevents it. Unless properly assisted, there occurs a considerable delay in its escape from the uterus. The difficulty results from the acutely flexed state of the organ, and the knowledge of this fact is the secret of success in the treatment of such cases of retention

* Fig. 121 represents the condition of the uterus when distended by a retained ovum or clots in a case of ante flexion.

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of the ovum. The cavity of the uterus may become considerably distended by blood or clots, as shown in the annexed figure (Fig. 121). In these cases of miscarriage, if the ovum is retained, a frequent result is that it becomes putrid, and gives rise to an offensive discharge which may continue for some time. When, however, the uterus is artificially straightened, the ovum is generally easily evacuated, and the offensive discharge ceases. Such retention of part of the ovum may occur equally in ante flexion and retro flexion of the gravid uterus. With reference to the importance of this relation subsisting between retention of the ovum in early miscarriages, and flexions, I do not hesitate to say that, since my attention has been directed to the mechanism of these occurrences, I have not seen a case in which the relation described has not been most obvious. The difficulty in relieving the patient and putting an end to her various discomforts has ceased on taking measures to straighten the canal, and thus allowing the uterus to exert advantageously the proper expulsive action on its contents.

TREATMENT.

In simple cases, where the symptoms are not severe and the patient has not had an abortion, the following treatment will probably prove sufficient: The patient should be instructed to avoid all severe exertion until after the end of the fourth month; she should avoid the sitting position whenever practicable; carriage exercise only in the recumbent position; short walks to be preferred; as a rule, the patient to use a chair with a very sloping back, or the sofa; nothing tight to be worn over the abdomen; and the bowels to be carefully regulated, so as to avoid any straining effort.

In more severe cases the patient must at once take to her bed in order to have the advantage of perfect rest in the horizontal position. If relief of the symptoms does not follow very speedily—*i.e.*, within a day or two—it may be necessary to assist the elevation of the body of the uterus. This may be done best by inserting a small air-ball pessary about one and three quarter inches in diameter into the vagina, and inflating it to two inches with air. This may be left *in situ* for twenty-four hours, and then removed and reapplied if necessary. To aid in the elevation of the uterus a pillow may be placed under the pelvis for an hour

at a time, the head being only slightly raised. I have frequently employed a cradle pessary in severe cases of ante-flexion of the gravid uterus, removing it when pregnancy has reached the end of the fourth month. In several cases, this instrument having been used to remedy the ante-flexion, the patient has continued to wear it uninterruptedly up to the end of the fourth month; but I do not recommend that, in such cases, the cradle pessary should be employed in a haphazard way, or by any one not accustomed to its use.

I regard the positional treatment above described as quite essential in such cases. A remarkable proof of the adequacy of the explanation of the occurrence of severe sickness in pregnancy is afforded by the success of this positional treatment in relieving the patient: for I have records of many cases where the sickness has been relieved almost at once by mere positional treatment alone.

The very severe class of cases remains to be considered—that, namely, in which the condition of the patient is critical owing to long-continued and irrepressible vomiting. These cases present themselves almost (but not quite) without exception just before the mid-period of pregnancy. It is in this class of cases that it has been thought right to advise the induction of abortion in order to save the patient's life. The late Dr. Copeman of Norwich, a few years ago found that by dilating the cervical canal of the uterus the nausea is arrested. He had dilated the cervix as preparatory to the evacuation of the uterus; but the day after the dilatation, as the nausea had disappeared, it was not necessary to complete the process, and the patient had no more sickness. He repeated the operation in other instances with a like result—finding thus, as he believed, an important and valuable means of arresting the vomiting in these dangerous cases. A more particular account of these cases and of the deductions to be drawn from them will be found in the succeeding chapter.

A perusal of the particulars of his cases will, I believe, sustain the belief that they were cases of ante-flexion of the uterus, coupled in some instances with very marked rigidity of the cervix, and great resistance and firmness of the structures around the internal os uteri; in other words, that the uterus was either markedly ante-flexed, or that there was hypertrophy and contraction, the result of pre-existing flexion of the uterus.

The success of the procedure, which Dr. Copeman him-

self did not attempt to explain, is to be accounted for as follows: (1) These are cases, usually, of ante flexion, the os is far back, the body of the uterus low down behind the symphysis. Now it is impossible to introduce the finger—indeed, any dilating agent—into the cervical canal without drawing forward the os uteri; equally impossible to draw the os uteri forward without at the same time dislodging the uterus from its abnormal position; in other words, the procedure of dilatation of the cervix had as one of its results the rectification of the position of the uterus. (2) The actual dilatation of the cervix uteri. This dilatation, in cases where the cervix is contracted and hardened by previous disease, releases the tension of the parts, and, in fact, it does artificially what the uterus has been vainly trying to do before for itself. Experience has shown that this condition of things is liable to be met with in certain cases, and they will probably be almost invariably found to be cases where there has been marked flexion of the uterus previously, and generally cases in which there have been previous pregnancies.

Two kinds of difficulty may be met with in cases of ante flexion of the gravid uterus: (1) The position of the uterus cannot be rectified, or (2) the cervix is very hard and condensed, and hypertrophied. The two difficulties may be met with in conjunction or separate. When the condition of the patient is a critical one, it may be assumed that one or both of the difficulties described exists, and requires mechanical assistance.

1. As regards the liberation of the uterus. Carefully applied pressure will hardly ever fail in elevating the uterus, and in cases where this is impossible the method of pressure by use of an elastic, air, or water pessary in the vagina may be tried. It is to be expected that, in some cases, one or two days or more might be required to effect the reduction, the pressure being gradually increased from time to time.

2. Concurrently with the rectification of position of the uterus, or separately, or subsequently, as circumstances might indicate, the dilatation of the cervix may require to be performed. The best means of accomplishing it will be described in the next chapter on the Treatment of the Vomiting of Pregnancy.

I have in my own practice only had occasion to use dilatation of the cervix once in a case where rectification pure

and simple failed in relieving the nausea. In this case the uterus was exceedingly hard and almost cartilaginous, and the nausea persisted in spite of rectification of the ante flexion. In this case I adopted the dilatation method of Dr. Copeman and found the tissues around the internal os very unyielding, and the dilatation was effected with the greatest difficulty. The nausea became relieved, but abortion followed in this instance.

SUBSEQUENT TREATMENT.

When abortion has occurred in consequence of ante flexion of the uterus, the malady is likely to become much exaggerated afterward, unless care be taken to prevent it. The patient must be kept in the horizontal position for some days after the abortion and means taken to promote the involution of the uterus in a proper manner. If no care be taken, the uterus is very apt to settle down, as it hardens and contracts, into a condition of flexion even worse than existed before; and a repetition of abortions produces chronic hypertrophy and exaggeration of flexion, and the other usual effects of these complications. A few days after the abortion is over, and before the uterus has firmly contracted, is an excellent opportunity for moulding the organ into a better shape, and at that time a pessary may often be employed with great advantage.

CHAPTER XXVIII.

THE VOMITING OF PREGNANCY.

AUTHOR'S Explanation, and Paper on Subject in 1871.

SEVERE OR DANGEROUS VOMITING IN PREGNANCY.—Historical and Critical Inquiry into the Subject, with Summary of Observations recorded by Others—Account of Cases published—Dr. Copeman's Cases: Explanation of these—Cases observed by the Author—Aubert's Observations on Influence of Movements of Uterus in producing Nausea—General *Résumé* of the Subject.

TREATMENT OF THE VOMITING OF PREGNANCY.

The subject discussed in the present chapter is one which more usually finds a place in works on the subject of midwifery, but the close connection which appears to subsist between the presence of distortion of the uterus and the

occurrence of severe vomiting in pregnancy renders it desirable to discuss the question as a sequel to the preceding chapter, wherein the association of flexions of the uterus with pregnancy has been considered.

In a paper presented to the Obstetrical Society of London, 1871,* I ventured to offer an explanation of the cause of the vomiting of pregnancy.

Nausea and vomiting are associated with pregnancy. Nausea and vomiting are associated with disease of the uterus. Both these propositions are true. But nausea and vomiting are not *always* present in cases of pregnancy, nor are these symptoms always present in cases of uterine disease.

Looking at the question from a broad point of view, it is quite evident that the condition (whatever that may be) which gives rise to nausea and vomiting in uterine disease is *possibly* the cause of it in pregnancy.

Unquestionably, the occasional obstinacy of the symptom is equally observed in pregnancy and uterine disease. An attentive comparison of the phenomena witnessed in the two, and a close scrutiny of clinical facts, mutually throw light the one on the other.

Having frequently observed severe sickness in cases of flexion of the non-gravid uterus, and observing the occurrence of marked sickness during pregnancy in the same cases, I was led to the conclusion that the flexion of the uterus is the condition which gives rise to the severe sickness in both conditions. Carefully testing the accuracy of this conclusion by observation of cases I was induced to frame the theory that the sickness of pregnancy is due to the combined effects of the increasing distension of the uterus and an associated flexion of the organ. Facts led me to the conclusion that in cases of flexion it is the compression undergone by the uterine tissues (markedly by the nerve-fibres) at the seat of the flexion which is the cause of the nausea and sickness, both in the gravid and in the non-gravid state.

The patient generally experiences the symptom in question on first rising in bed in the morning, or while dressing. Why is this? Is it not because the body of the uterus falls a little downward in obedience to the law of gravity, thereby

* "Obst. Trans." vol. xiii.: "The Vomiting of Pregnancy: its Causes and Treatment."

producing a slight flexion and a compression of uterine tissues at the seat of the flexion? During the first three and a half months the temporary flexion is possible, because the uterus is still in the pelvis. Generally, after that time it rises out of the pelvis, and flexion decreases with the decrease of nausea. Is it not the fact that, for the most part, the liability to nausea and vomiting ceases at precisely this period? It is also a fact, which will be confirmed by all who make the experiment, that, in ordinary slight cases of nausea and vomiting, by ordering the patient to remain absolutely in the horizontal posture the disturbance ceases.

Since the publication of my original paper in 1871 the subject has much occupied my attention, and many new facts have been recorded by various observers. I propose now to consider the subject as it stands at the present time, giving an account of the principal recorded facts bearing on the subject.

The principal interest attaches to those cases in which the vomiting seriously endangers life; and it is therefore desirable that the facts relating to such cases should be carefully considered.

SEVERE OR DANGEROUS VOMITING IN PREGNANCY.

A tendency to nausea and vomiting have been from time immemorial associated with the existence of pregnancy—so much so, indeed, that the presence of nausea and sickness have come to be regarded as a sign of the existence of pregnancy. In a mild form nausea and vomiting are rather common in the early months of pregnancy; but as many cases occur in which the symptom is absolutely wanting, it cannot be regarded as essential to pregnancy. As a rule, the degree of nausea or vomiting observed is not severe, only producing inconvenience; but in a few cases it is exceedingly severe, and becomes dangerous, (1) because of the exhausting effect of the repeated efforts of vomiting, and (2), because of the starvation it produces. The dangerous cases are those in which the vomiting is uncontrollable, and in which it continues for weeks or months.

While, therefore, as a rule the sickness of pregnancy is not a matter calling for serious attention, the exceptional cases just alluded to, where the malady is so serious as to imperil life, have been the subject of much attention; for in not a few instances death has actually occurred as the result of severe uncontrollable vomiting in pregnancy.

Respecting the very severe cases of vomiting in pregnancy, it is necessary to state, in the first instance, that in the large majority of cases the records of autopsies have thrown but little light on the cause of the excessive vomiting which destroyed the patient. In some rare instances lesions of other organs have been encountered, presumably in some measure explaining the sickness; in some cases the uterus was in an abnormal condition; but in the large majority of instances no lesion of any kind was found.

A good account of the published literature of the subject was given by Anquetin in the year 1865.* More recently† Dr. McClintock has written an essay summarizing the principal known facts relating to the subject.

1. It has been shown that in some of the few fatal cases in which autopsies have been made the fatal nausea was *probably due to lesion of some other organ than the uterus.*

Under this head may be mentioned—a case recorded by Valleix where chronic gastritis was found to be present (Query—Was the gastritis the result of the vomiting?); a case by Taurin, of redness and softening of the stomach; cases by Dubois, Chomel, and Sandras, of similar character; a case by Depaul, where cancer of the pylorus was found *post mortem*; a case by Pipelet, of epigastric hernia; a case by Lanceraux, where Cæsarean section was performed, and after death atrophy of the muscular system and of cellulo-adipose tissues was found to exist; a case by Trousseau, where scirrhus induration near pylorus was found after death; a case by Schützbach, where a tumor the size of an egg, near the pylorus, was found in a state of ulceration after death (these cases are quoted by Anquetin). In addition to the foregoing, Anquetin mentions cases of tubercle of lungs (Schilachigla), tubercle of brain (Rayer and Depaul), alterations of mesenteric glands (Sandras), of glands of epigastrium (Blot), fatty degeneration of liver (Chomel), biliary calculi (Taurin), redness of semilunar ganglia of solar plexus (Lobstein), congestion of meninges (Sandras). Burns‡ gives a case where a biliary calculus was found to be impacted. Robert Lee§ gives a case where bronchitis and fever had occurred before the vomiting set in.

* "Rev. Méd." (1865), pp. 205, *et seq.*

† *Dubl. Med. Journ.*, May, 1873.

‡ "Midwifery," p. 265.

§ "Clin. Med.," p. 107.

2. Next we come to cases where *the uterus was found on post-mortem examination to present something abnormal.*

Dance* observed two fatal cases—I. In the first, death occurred in six weeks; there was found to be pus between the uterus and placenta, and pseudo-membranous concretions between the uterus and decidua; II. in the second, death in twelve weeks; the uterus was found beginning to rise out of the pelvis; its walls were scarcely one and a half lines thick, unusually soft, deeply engorged, and of a violet-red color. III. In a case by Chomel pus was found on the external surface of the decidua.

3. The next category of cases is that in which *some abnormal condition of the uterus was discovered during life.* I have collected a considerable number of cases, particulars of which are subjoined, the facts of which have a bearing on the present discussion; but there are probably others on record which have escaped my notice. One of the most important cases is the following:

I. *Case of Vomiting in Pregnancy caused by Retroversion of the Uterus.*—Brian records† a most interesting case, for reference to which I was originally indebted to Dr. Barnes, and of which the following is a slightly abbreviated account: X., æt. 25. First pregnancy, six years ago, ended normally; second ended favorably, three years ago, but there was some nausea and slight pains. Soon after recovering, sustained accident, being thrown out of a carriage, and very much frightened. Leucorrhœa then noticed and continued; has had also digestive troubles. Third pregnancy commenced in March, 1856. Vomiting began following month, and increased in severity. In May she kept to her bed. Intolerable gastralgia, constipation, insatiable thirst, no kind of nourishment retainable, next observed; also painful clonic spasms of limbs, profound exhaustion and depression, and sleeplessness. On May 2 first seen by Brian, who was implored to procure abortion. Nothing was then done, but Professor Moreau saw the patient, and thought the vomiting would cease as the womb rose out of the pelvis. Case now fell under other treatment. On June 9 Brian again in charge of the case, the patient's condition much aggravated; he insisted on a careful examination. No abdominal tumor to be felt, as it should easily have been in the patient's

* *Répert. Gen. d'Anat. et de Physiolog.*

† *Gaz. Hebdomad.*, July 18, 1856.

emaciated state. On June 4 Professor Moreau again saw her, and by vaginal examination discovered existence of incomplete retroversion, fundus deeply lodged in the cavity of the pelvis. "He ascertained that the uterus was imprisoned in the curvature of the sacrum and confined on all sides by the osseous *cul de sac*, without being able to rise up above the sacral promontory. As soon as he was aware of these circumstances, by a skilful manœuvre he disengaged the fundus uteri from its abnormal position, causing it to ascend, and thus bringing it into the longitudinal axis of the abdomen." After this operation the patient felt immediately relieved, the vomiting ceased, and complete recovery took place.

II. Stolz records a case in which the uterus was retroverted, and the excessive vomiting was at once suspended on replacing the uterus. Eventually abortion was induced.

III. In a case by Depaul, at seventh month, it was found that the internal os uteri was completely obliterated. Incisions were performed, and the child born alive.

IV. Clay* records a case of sixth pregnancy, æt. 40, at seventh month. He determined to induce labor. Introducing the finger, he found the uterine cervix so sensitive that the slightest touch produced vomiting. Finding this to be the case, he resolved to try the effects of rest. Patient was kept in bed, and in twenty-four hours could take food. Persistence in the rest treatment produced a perfect cure.

The following is a very important and interesting case recorded by Ulrich,† for reference to which I was originally indebted to Dr. Barnes, and which, owing to its being the first recorded case of the kind, is here given in full:

V. *Anteflexion of the Gravid Uterus; severe Nausea; Death.*—Frau Freudenburg, thirty-four years of age, had been healthy, and menstruated regularly up to the date of her marriage on April 1. Since that date coitus had caused her on each occasion a painful feeling in the abdomen, which soon became so great that she at last resisted all attempts at intercourse on the part of her husband. On April 30 the menses appeared as usual; during May she continued in her usual health. At the end of May the menses did not appear. On June 1, without being in any other way unwell, she was attacked with frequent vomiting.

* *Gaz. Hebdomad.*, 1857.

† "Monatsschrift für Geburtsk." 1858.

At first a part only of the food she took was returned, but very soon the evil increased to such an extent that all food taken into the stomach was vomited, solids as well as fluids, and when the stomach was empty a nauseous sensation remained for a long time. At this period she was also attacked with pains in the epigastrium, which came on in acute paroxysms. By medical advice leeches and blisters were applied to the epigastrium, and all sorts of narcotics and antispasmodics were given internally, without avail. The patient continued vomiting from day to day, and the pains robbed her of her night's rest, and reduced her to a weak, nervous condition. She resolved, on July 8, to seek relief in St. Hedwig's Hospital. Her condition on admission was the following: Bodily frame weak, muscles relaxed and flabby, atrophy of the subcutaneous fat, on the front of the body several scattered pigmentary spots, pulse small and frequent always, no tenderness of subjacent organs by light pressure on the abdomen; on vaginal examination so high that the posterior lip could with difficulty be reached, the os, rounded and with smooth surface, could be felt in the left posterior portion of the pelvis. The enlarged and doubled-up body of the uterus could be felt lying behind the right horizontal ramus of the pubes. By the aid of gentle pressure with the other hand through the abdominal wall the uterus was found to be markedly anteflexed. The position of the flexion could be distinctly felt through the roof of the vagina. The breasts were enlarged, and the areolæ darkened. Menstruation had ceased since the end of April. During the first day of her stay in hospital the patient sat up in bed in a bent-over position; she was tormented with continuous nausea and vomiting, all food was returned as soon as swallowed, and large quantities of tenacious mucus were brought up from the empty stomach; rest and ease were impossible, owing to the complete loss of sleep, fearful thirst, and obstinate constipation. The diagnosis was asthenia from the vomiting of pregnancy, but the false position of the uterus must be regarded as the essential cause of the evils, and its further expansion would render matters worse, and produce greater irritation of the uterine nerves; therefore an attempt must be made manually to replace the dislocated uterus. Many attempts were made, but they all proved unsuccessful; as the strength of the patient became more exhausted, so was the indication greater for the artificial production of abortion. However,

I did not resolve on this until I had made a last trial with the various well-known internal remedies, of which *tr. iodi* is most recommended. With the consent of her husband, accordingly, as a last resource, three to four drops of *tr. iodi* were administered daily. After forty hours of this treatment, the repugnance of the patient to this treatment became so great, that only by repeated persuasions could she be induced to continue it. As all was useless, on July 24, with the consent of her husband, an attempt was made to introduce the uterine sound, but failed, and again after two days; this was partly owing to the restless movements of the patient, and partly owing to the high position of the cervix uteri; the sound was only just able to be introduced into the cervix uteri.

I made a third attempt on July 31, in consultation with Dr. Brandt, and managed at last to introduce the sound as far as the bend; to have pressed it on further would have been impossible, owing to the danger of wounding the patient. Unfortunately, at this time the strength of the patient was so far exhausted, that even in the case of the complete emptying of the uterus an unfavorable termination was probably to be expected. Up to August 2 little change occurred in the health of the patient; then the vomiting ceased suddenly, whilst at the same time the intellect became disturbed, light delirium alternating with deep drowsiness, the pupils were fixed and dilated, and convergent strabismus set in, occasioned by the paralysis of the external rectus. On August 4 she died.

No further vaginal examination had been made after the last introduction of the sound. In laying out the body for *post-mortem* examination twenty-four hours after death, the fœtus fell out of the vagina, the placenta lay within the os and was brought out by light traction on the umbilical cord. The *post mortem* revealed the following: On the surface of the hemispheres underneath the arachnoid were a small number of jelly-like serous exudations, free from blood-staining; the substance of the brain was extraordinarily anæmic; at the base of the brain, around the origin of the sixth nerve, there was no evidence of anything abnormal. The chest-organs were healthy, the lungs notably dry, the heart small and firmly contracted. In the intestinal canal, liver, and spleen, no pathological changes were found. The body and fundus of the uterus, considerably enlarged, lay directly behind the right horizontal ramus of

the pubes, much anteflexed; the length of the body of the uterus was five and a quarter inches, the position of the flexion was three inches from the os. On the under surface the walls of the uterus were soft and flabby; on the upper surface they were much condensed and very firm. On opening the cavity of the uterus the placenta was seen to have had its attachments to the lowest segment of the uterus, and thus had harbored the fœtus above. Above the seat of flexion in the upper segment of the uterus no free cavity existed; the small interval between the rigid walls of the uterus was filled with a mass like a placenta firmly adherent everywhere. The fœtus was five inches long, the umbilical cord six and a half inches.

It appears evident that pregnancy had existed for nearly four months, and that after conception the menses appeared on one occasion; and it is my decided opinion that the bending of the uterus, and consequent hindrance to the regular expansion and growth of the uterus, was the influence producing the obstinate vomiting.

VI. Dr. Tyler Smith* recorded a case in which nausea set in early in the pregnancy. When the patient was two months pregnant there was incessant vomiting and extreme emaciation. She was kept alive by teaspoonful doses of beef-tea every half hour, and injections of beef-tea. When four months pregnant, the uterus could be felt above the pelvic brim. Abortion set in spontaneously at five months. The patient did well for three weeks, and then rapid phthisis set in.

Dr. Tyler Smith believed that "an almost poisonous influence seems to be exerted by the gravid uterus in some constitutions." Also that nausea is "probably cured by the distension and evolution of the dense structure of the uterus after impregnation, or by the pelvic irritation caused by the gravid uterus before it emerges from the brim, or from both these causes."†

Ulcerations of the os uteri have been considered to be the cause of the excessive vomiting by several authorities, including Dr. Henry Bennet; and scattered through medical literature will be found cases in which relief from sickness has been to a certain extent obtained by topical applications to the os uteri.

Severe Nausea associated with Anteflexion.—The following

* "Obst. Trans.," vol. i.

† "Manual of Obstetrics," p. 99.

case, observed in consultation with Dr. Royston, was quoted in my original paper:*

VII. The lady, *æt.* 24, quite recently married, had menstruated last October 14, 1870, a very slight discharge being observed on November 3. Since November 3 there had been occasional sickness, and from the end of January up to February 21, when I first saw her with Dr. Royston, the sickness had been severe. Dr. Royston informed me that the lady was pregnant, that when first called in to see her, about a fortnight before, the sickness was most severe, and no article of food could be retained. On hearing Dr. Royston's account of the symptoms I expressed my opinion that the uterus was acutely anteфлекed, that the fundus of the uterus would be found to be low down, jammed in the pelvis, and that this was the explanation of the symptoms. On proceeding to make an examination my opinion was found to be exactly verified: the os uteri lay far back, the roof of the vagina was projected downward and backward by the enlarged and anteverted and -флекed uterus, and the body of the uterus was scarcely to be felt at all through the abdominal wall, although the pregnancy was probably of about four months' duration.

The patient had, in my opinion, suffered from anteфлекion before marriage, and, pregnancy having occurred, the uterus had gone on growing and expanding without losing its vicious shape, and, indeed, with an increasing aggravation of that vicious shape, up to the time of my seeing her.

The evidence that anteфлекion existed prior to marriage was as follows: The patient was never able to dance without discomfort. She had, six years prior to marriage, taken for six months violent horse exercise, to which she was previously unaccustomed, and this was followed by losses similar to those of the menstrual periods, and by diarrhœa. On another occasion, a year later, horse exercise again brought on similar symptoms.

In this case the advice given was that the patient should remain altogether in the horizontal position in order to allow the expanding uterus a better chance of escaping from the pelvis, and that the bowels should be kept regularly open. The result of this treatment was that the chief symptom—the nausea—underwent at once a most mate-

* "Obst. Trans.," vol. xiii.

rial alleviation, soon disappeared, and delivery at full term occurred.

VIII. Dr. Æneas Munro* in 1872, shortly after the appearance of my paper, published a case which, to use his own words, "in a very remarkable manner bears out to a certain extent what Dr. Hewitt has said on the matter." The case was that of a primipara, æt. 21. When seen first, in the third month of pregnancy, the vomiting had become intense. The uterus was found acutely anteflexed and quite fixed. An attempt to push the uterus up failed. The sound passed in about five and a half inches. Some days later, no relief being obtained, and symptoms being very urgent, premature labor was induced. Recovery complete. Dr. Munro in one place states that there was no jamming of the uterus in the pelvis; but in another he says that he found it so fixed in its abnormal position that it could not be moved upward.

Dr. McClintock,† in an essay on the subject published after the appearance of my paper in the "Obstetrical Transactions," gives a collection of cases of severe vomiting in which premature labor was induced to relieve the patient. He confesses that "we are yet very much in the dark" as regards the etiology of the sickness. Dr. McClintock declined in his paper to accept the explanation which I had offered as to the influence of flexion of the uterus.

IX. Dr. McClintock‡ gives a case, that of a primipara æt. 24, who at the end of two months was found suffering severely from sickness. "The uterine tumor could not be distinguished above the pubes; but *per vaginam* the body of the organ was felt enlarged and slightly anteverted, as is often found to be the case at this period of utero-gestation." Ten days later the patient was in a highly dangerous state, and abortion was induced.

Dr. McClintock accepts the dictum of Dr. Barnes that the normal position of the uterus in early pregnancy is anteversion, and evidently considers that in the above case there was nothing abnormal in the condition of the uterus. It is probable, however, from the facts related that the body of the uterus was really abnormally low in the pelvis.

One of the arguments used by Dr. McClintock and some others, which seem to them to tell against the influence of

* *Glasg. Med. Journ.*, Aug., 1872.

† *Dub. Med. Journ.*, 1873.

‡ *Ibid.*, May, 1873.

flexion and displacement of the uterus in producing the nausea of pregnancy, is that in cases of retroflexion of the gravid uterus sickness is not always present. True; but the same holds good respecting retroflexion of the non-gravid uterus. Sickness is not a constant symptom in cases of the latter kind, but I have known most severe and distressing sickness to be produced by retroflexion in the non-gravid state which has been almost magically relieved by elevating the fundus, thus showing in the most indisputable manner that the sickness was due to the flexion. So again with antelexion: neither in the gravid nor in the non-gravid state is sickness an invariable symptom, but this does not prove that the antelexion is not responsible for the sickness when it does occur.

A very important contribution to the pathology of the subject is that of the late Dr. Copeman, of Norwich. In 1875 Dr. Copeman published* a paper in which he related three cases, of which the following particulars are given in brief:

X. A patient, six months pregnant, so reduced by sickness that fears were entertained for her safety. It was resolved to induce premature labor. The cervix was dilated with the finger as a preparatory step. An hour later, when further measures were about to be taken, the patient was so much better that it was thought best to wait. From that time improvement set in, there was no return of sickness, and delivery at full term occurred.

Dr. Copeman was struck by this case, and "wondered whether the relief could have been effected by his having dilated the os uteri and thus removed any undue tension that might be producing sympathetic irritation."

XI. In a second case (where "there was some degree of anteversion") the same procedure had a like good effect.

XII. In a third case equally good effects, in relieving a patient from severe sickness, followed the dilatation of the os uteri with the finger.

This paper of Dr. Copeman's attracted my attention, and in a communication to the *British Medical Journal* a fortnight after,† in speaking of Dr. Copeman's cases, I stated

* *Brit. Med. Journ.*, May 15, 1875. Dr. Ely Smith (*Brit. Med. Journ.*, Aug. 21, 1875) says that Dubois first noticed this effect of dilating os in arresting vomiting.

† *Ibid.*, May 29, 1875.

that they offered a strong confirmation of the truth of the doctrines I had previously expressed on the subject. The explanation of Dr. Copeman's success I held to be that the operation of dilating the os uteri was itself the means of righting the uterus, for the os must have been pulled forward in order to dilate it, and this would have the effect of tilting the body of the uterus upward, and thus (assuming that they were cases of anteversion: Dr. Copeman himself stated that one was) the operation reduced the displacement. I further added, "It may be said, How do you explain the cases in which the vomiting persists as late as the eighth month, which was the fact in Dr. Copeman's third case? The answer is, that where there has been an acute flexion in the early part of the pregnancy, as the uterus enlarges (if abortion does not occur) the flexion is in most cases abolished, and the effect of this is, that the sickness generally disappears under such circumstances. But *the tissues of the uterus at the seat of the flexion are sometimes left in a diseased state, being stiffened and unduly resistant, and thus the irritation is kept up.* Dr. Copeman's treatment would undoubtedly tend to remove this stiffening and constraint."

Dr. Copeman in a further paper* comments on various opinions elicited by his first paper, and says that his own opinions were not sufficiently matured to enable him to give any positive explanation of the causes of the sickness, but he is "inclined to believe that in such cases there is always some irritating condition present, which induces a strain upon the neck of the uterus, or perhaps also on other parts of the uterus."

In this his second paper Dr. Copeman relates a case which most curiously corroborates the views I had expressed as to displacement being the cause of the sickness:

XIII: A lady in her second pregnancy, five months advanced, was very sick; she had frontal neuralgia also. She had for some weeks taken violent exercise. The sickness and the neuralgia continued. The abdomen did not appear to enlarge as much as usual. On examination *per vaginam* the head was found low down in front, and the os uteri corresponding with the promontory of the sacrum. "It seemed to me," says Dr. Copeman, "that the uterus was anteverted so as to allow the head to be felt below the level of the os

* *Brit. Med. Journ.*, Nov., 1875.

uteri." Dr. Copeman, by gentle, continued pressure, raised the protruding portion of the uterus out of the lower pelvis and restored the os uteri to a more natural position, after which he prognosticated no further vomiting would occur. And, in fact, so it happened—the cure was complete.

In this case, therefore, the nausea was cured *by reducing the uterus to its proper position*, Dr. Copeman not having employed any dilatation of the os as in the other cases, and it offers a remarkable illustration of the truth of the critical remarks which I had before offered on the *modus operandi* of Dr. Copeman's procedure. In fact, the patient was cured without dilatation of the os uteri at all.

XIV. *Case by Dr. Copeman.**—Pregnant eleven weeks; severe and uncontrollable vomiting lately. Fundus tender on pressure; and displaced forward. The displacement was rectified and bowels opened. Sickness much less next day, but as it continued slightly os was dilated with finger. Cure.

XV. *Case by Dr. Copeman.*†—Six weeks pregnant; three weeks sickness. Position of uterus thought to be normal; posterior lip hard and unyielding; os gradually dilated, and, after two days' rest, cure.

XVI. *Case by Dr. Copeman.*‡—Six weeks pregnant; nearly incessant sickness two weeks. After dilatation of os by finger as far as os internum, vomiting ceased.

I subjoin some published cases in which dilatation of the os uteri after Dr. Copeman's plan was followed.

XVII. *Case by Mr. Atkinson*§ *of Halifax.*—Incessant vomiting at six months, in a multipara. Vomiting ceased after digital dilatation of os uteri.

XVIII. *Case by Dr. Minot*|| *of Boston.*—A sponge tent introduced into the cervix allayed the vomiting.

XIX. *Case by Dr. Dukes.*¶—Patient, æt. 33. Has had five children and five miscarriages. The previous pregnancy, after eight months' incessant vomiting, was relieved by induction of premature labor. Now pregnant two months. Remedies now failing, the os was dilated digitally, the tissue being found very hard and cartilaginous. Vomiting was at once relieved and soon ceased altogether.

* *Brit. Med. Journ.*, Sept., 1878.

† *Ibid.*, June, 1879.

‡ *Ibid.*, Sept., 1876.

† *Ibid.*, May, 1879.

§ *Ibid.*, Nov. 6, 1875.

¶ *Ibid.*, Feb. 23, 1878.

XX. *Case by Dr. Gooch* of Eton.*—Mother of two children, pregnant eight months. Incessant vomiting for two months; lying on back produced the vomiting. The os uteri found hot and painful. Dilatation by finger and separation of membranes round os; escape of much offensive discharge; relief of vomiting; pregnancy went to full term.

XXI and XXII. *Two Cases by Dr. L. Rosenthal.* †—Cure by digital dilatation of os—one patient in second pregnancy, the other a primipara.

XXIII. *Case reported by Mr. J. T. Fry† of Swansea.*—The cervix, and especially the posterior lip, was hard and gristly. Neither the finger nor tangle tent could be introduced. A long and slightly anterior curved throat forceps was used, and gently but with some force dilated; the os was thus dilated. The effect immediate in removal of the vomiting. The patient had been obliged to have premature labor induced in previous pregnancy.

XXIV. *Case by Dr. Murillo§ of Santiago.*—Primipara, æt. 22, in third month of pregnancy; sickness severe. On four occasions, at intervals of a day or two, the finger was introduced into the softened cervix as far as internal os. After a week sickness ceased.

The following is a series of cases which have been observed by myself during the last ten years, illustrative of the question now under consideration, and of which I have preserved notes; but I have seen others of a similar kind, records of which have not been kept.

XXV. *Retroflexion of the Gravid Uterus causing Severe Nausea.*—The subject of this case, now published for the first time was the wife of a medical man. She consulted me first in January, 1869, for severe pain in the chest and heart. The uterus was found to be retroflexed, and the last catamenial period was on December 5, about seven weeks previously. On February 20 a second omission of menstruation was noted. She was then suffering much from sickness, and pregnancy was considered to be present. This pregnancy ended favorably; but I saw nothing of the patient further until the year 1872 (January 24). Patient now 26; has had three children, two of these since I last saw her; last child is a little over three years old.

* *Brit. Med. Journ.*, Sept. 28, 1878. † *Ibid.*, Aug., 1879.

‡ *Ibid.*, March 13, 1880.

§ *Lond. Med. Record*, Feb. 15, 1878.

Patient now six weeks pregnant. She is suffering from severe sickness. The uterus is found to be retroflexed. A ring pessary (Hodge-shaped) was applied, and she went home. On February 22 I was sent for and found her extremely ill, suffering from intense sickness. The sickness had induced severe jaundice and an extreme depression and feeling of collapse. The ring pessary had ceased to do its work properly, being too small for the increased size of the uterus, and the organ was retroverted over the top of the pessary. A larger instrument was applied. The patient, who was in a most alarming state of depression, very speedily felt better, and she visited me at my house on April 2, also on April 17; but on April 19 I was summoned to see her again with a repetition of the same severe symptoms, the vomiting having returned in a most intense degree. Again I found the mechanism of the support at fault; the exertion of coming to my house had been too much, and the uterus was still displaced. Relief followed its readjustment; but great difficulty was found in retaining the uterus in its place (though it was easy enough to replace it) owing to the indisposition of the patient to keep quiet. Whenever the uterus was in proper position the symptoms abated as if by magic; but recurred as speedily when the fundus succeeded in eluding the action of the pessary. Finally, an end was put to the case by the occurrence of premature labor on June 26, the patient being then a little over six months advanced in pregnancy.

The husband of this lady informed me, in answer to a letter in May, 1876, that since that time she slowly recovered her strength, but that every now and then she is liable to attacks of "biliary colic." She does not, he states, now suffer from the retroflexion. She has been pregnant once since, but did not go her full time owing, he believes, to anxiety and fatigue in nursing her sick children. He remarks, as a curious circumstance, that she has only been sick when pregnant with girls.

The case is a most interesting one, the history of retroflexion as affecting the pregnancies being, in regard to many of the details, known to me from personal observation. I saw her suffering from sickness at the beginning of her second pregnancy, and relieved her from the displacement so that she went her full time. Further, I saw her in her fourth pregnancy again affected with retroflexion, and again suffering from sickness, but on this occasion in a

much more severe form. On three or four distinct occasions during this fourth pregnancy the sickness actually threatened to destroy her, but each time it was arrested by the raising of the uterus from its retroflexed position. The repetition of the disorder, however, ended in premature labor at about six and a half months; but had the patient been more careful and less wilful, it is probable that pregnancy would have gone on to full term.

XXVI. *Nausea due to Antelexion of the Gravid Uterus.*—

A. M., æt. 21, patient at University College Hospital, 1874. The notes by Dr. E. M. Skerritt. Married two and a half years, no children, no miscarriages. Menstruation never regular, intervals occasionally three or four months, and always scanty and very painful. She has not menstruated for the last four months, the last time after a previous interval of four months. The present illness for the last four months; gradually the symptoms have become worse. For the last three weeks she has been confined to her bed. Her chief complaint is of pain of an aching or griping character at the lower part of the abdomen, much more intense of late, and accompanied by nausea and vomiting occurring both on getting up and during the day. Expression painful, areolæ enlarged, distinct brown pigmentation, areolar glands enlarged; abdomen not distended, resonant, more resistance to pressure on left side. Pain referred to umbilicus, described as "cutting," with occasional exacerbations. General abdominal tenderness. On deep pressure over pubes a tumor is felt rather far back, giving impression of being the top of a tumor rising up from the pelvis, with a smooth rounded upper surface, two or three inches wide, flattened from before backward, and very tender. Bladder had been previously emptied. Os uteri found to be very high up and rather far back. In front of it can be felt what seems to be a considerable swelling, extending laterally, firm, smooth, rounded, and very tender. Such was the state on admission. The vomiting continued at intervals for a few days, the pain also, the tumor felt above pubes slowly increasing in size. On March 15 Mr. Rigden, the resident medical officer, examined her, and expressed his belief that the tumor was the antelexed uterus inclined more to the left side than right. On March 18 the tumor had risen higher, reaching now to within two inches of the umbilicus. The vomiting and retching still occasionally severe. Placental bruit

heard above right Poupart's ligament. On March 19 I was requested to see the patient for the first time. I noted that the condition of the breasts alone sufficed to indicate existence of pregnancy. The tumor above the pubes is of the shape and size of a four months' gravid uterus. The os and cervix are high up and far back, but not changed in regard to softness in the way usually met with in pregnancy. The body of the uterus not now to be felt through vaginal roof. I expressed my opinion that the patient was certainly pregnant; that the previous observations made by Mr. Rigden and others left no doubt that the uterus had been up to quite recently anteflexed, and that the enlarged uterus had now escaped from the pelvis.

March 20.—No vomiting or retching last night, no pain, no vomiting this morning.

March 21.—Pain latter part of night, felt very sick before breakfast, and on taking food vomited at once. Tumor still tender. Says that as long as she lies still there is no nausea, but that it occurs on moving in bed.

March 23.—Slight nausea when she sits up in bed early in the morning. Free from nausea now as a rule.

March 24.—Nausea still a little; vomited at teatime.

March 28.—Was sick on first sitting up in bed this morning; not sick since, though she has felt so. Not sick yesterday, but had nausea as before. Got up for first time to-day. Complains of occasional shooting pain in abdomen.

March 30.—Patient has not vomited since 28th, though she feels nausea at first sitting up. The patient left the hospital to-day convalescent.

XXVII. Retroflexion of Gravid Uterus; Severe Nausea.—Mrs.—, æt. , has had three children; suffered from severe sickness in all the pregnancies. Is now two and a half months pregnant, and suffering from severe sickness. The os is found far forward, the uterus much retroflexed. Ordered to lie on the face. Report later on states that the sickness was relieved at once; she had it slightly up to four months, when it absolutely ceased. She was delivered safely at full time.

XXVIII. Anteflexion of Gravid Uterus; Severe Nausea.—Mrs.—, æt. 33, has had eight children and three miscarriages. Now three and a half months pregnant; always suffers severely from sickness during pregnancy, together with intense mental depression during the first half of preg-

nancy, and during the latter half from swelling of the legs, varicose veins, and general distress. On this occasion tents have been introduced to procure abortion and relieve the sickness, but ineffectually. On examination the uterus is found to be anteflexed, the os uteri swollen, the anterior wall of cervix thin. Rest was ordered. Further history not known.

I have one case to record in which dilatation was had recourse to:

XXIX. Mrs. —, æt. 33, multipara. Very severe sickness arising from anteflexed uterus, with great hypertrophy and hardening of cervix and os. At the seventh week of pregnancy, death threatened by continued sickness, although the sickness was at first relieved by use of a pessary. Cervix dilated by metallic dilator, resistance to dilatation very great. Following day relief, but abortion occurred on second day after. Patient died a little over a fortnight later from exhaustion.

XXX. *Anteflexion of Gravid Uterus; Severe Nausea.*—Mrs. —, æt. 34, has had four children, now pregnant for fifth time. Last child four years ago. Is pregnant three months. Her expression was, "Can you relieve me of the constant sickness?" On examination it is found that the uterus is anteflexed, and the body is quite low down in front while the os is far back, the uterus being thus jammed downward behind the symphysis pubis. The patient was ordered to remain in bed for a week, and to lie on the sofa for three weeks afterward. Food to be given every hour in small quantities. A fortnight after reported to be much better, sickness hardly more than once a day. A month later, able to move about easily without sickness. Visited me, when eight months pregnant, quite well.

The cases which have been recorded in the preceding pages convey sufficient proof of the great efficacy—it may be almost said of the *complete* efficacy—of certain mechanical procedures at the os and cervix uteri in relieving the sickness of pregnancy in its severest form. I think there can be no doubt that the phenomena recorded are thoroughly explained by adopting the view that in these cases the tissues round the internal os uteri are prevented undergoing proper expansion. This impediment to expansion is either an actually present flexion of the uterus or a contraction and condensation of these tissues, the result of a previously existing flexion.

It is a noteworthy fact that in some of the cases recorded the cervix was found so hardened and resistant that very great difficulty was found in expanding it. Cases of this kind were always multiparæ, and the inference is natural that only in multiparæ is it likely that this inordinate resistance to mechanical *artificial* expansion will be met with.

Dr. Aubert* in his essay, "Influence of the Movements of the Uterus on the Vomiting of Pregnancy," describes a case where during digital examination the attempt to push the uterus to one side by the finger produced immediately nausea, which would have ended in vomiting had he persisted. The patient was, as afterward appeared, in the second month of pregnancy. A second examination, made at the end of the fifth month, showed that lateral pressure produced nausea, but less severe than on the former occasion. Aubert discusses the subject of this provocation of nausea as a diagnostic measure in the early months of pregnancy. He cites Gueniot, who gives cases where rest in bed appeared in some cases to arrest the vomiting of pregnancy. He notes also that Stolz found pressing the uterus *upward* did not give rise to vomiting. Aubert observed vomiting in 17 out of 37 primiparæ, while of 17 multiparæ only 4 had vomiting. Gueniot in 51 *severe* cases had 12 primiparæ and 39 multiparæ. In the discussion following Dr. Aubert's paper it was stated by M. Icard that in certain intractable cases vomiting, having lasted three or four months, had disappeared on rectifying the displacement found to exist on digital examination. M. Chatin had seen many cases where the vomiting ceased on altering the position of the uterus when displaced.

XXXI. In a case by Prof. Tarnier† of Paris, a multipara, three months pregnant, had incessant vomiting, which was allayed by plugging the vagina with wadding, thus preventing, as he thought, the uterus from moving about and being shaken.

GENERAL COMMENTARY.

Some writers, as Dr. Barnes, consider the vomiting of pregnancy, in severe cases, due to tension or stretching of the uterine fibres. This may be in part the cause. For it seems likely that irritation might be produced by an undue

* *Lyon Médic.*, Oct., 1871, p. 431.

† *Journ. de Méd. et Chir. and Brit. Med. Journ.*, Aug. 28, 1875.

degree of such stretching. But, supposing flexion to be present, this would be likely to give rise to undue stretching and tension of the uterine fibres. While undue compression is present on the concave side of the bend, there would be increased tension and stretching on the convex side. To those, therefore, who consider the tension theory the best, I would point out that in the flexed uterus while undergoing the process of expansion such tension will be greatly increased and irritation arising therefrom considerably aggravated. My own impression, however, is that compression is the particular and tangible irritating element in such cases. The very decided effects produced in some of Dr. Copeman's cases by dilating the cervix illustrate the efficacy of removal of condensation and tension around the internal os uteri in relieving the sickness; and Dr. Copeman's cases offer evidence of the most convincing character in this direction.

Where vomiting persists to the latter months of pregnancy, the condensation at the internal os has not been entirely removed by the unfolding and expansion of the uterus (see p. 372). The structures round the internal os uteri are not fully dilated up to quite the end of pregnancy in primiparæ, and thus, although the uterus may have lost its flexion, it by no means follows that the nervous filaments around the internal os are relieved of condensation, tension, and pressure at the same moment that the flexion is relieved. When the flexion is not of long standing, by the fifth month the uterus will have become relieved either by miscarriage or by unfolding. But if the cervical tissues are much condensed by long-standing flexion the arrival of mid-pregnancy may not give the expected relief.

Dr. Aveling's remarks on the subject of the nausea of pregnancy* are as follows:

Vomiting during Gestation.—This troublesome and occasionally dangerous disorder has undoubted relations to posture. It has the name of morning sickness from the fact that it appears when the patient leaves her bed and assumes the erect posture. It is evidently reflex in its character, and is probably produced by hypostatic hyperæmia and hyperæsthesia of the uterus. Certain it is that all obstetricians recommend the recumbent position for its re-

* On Influence of Posture on Women. *Obst. Jour.*, Feb., 1877 (No. 47), p. 722.

lief, and often with great success.' But Dr. Clay of Manchester goes further than this, and, believing gestational sickness to be dependent upon congestion and tenderness of the cervix uteri, advises a position of the body calculated to relieve the os and cervix from pressure against the pelvic viscera, best accomplished by lying on the back with the hips raised and head low. . . . Displacements of the uterus have been suggested as producing vomiting during gestation, and this is not unlikely, for mechanical hyperemy is often caused by them, and it would have the same effect as hypostatic hyperemy upon the uterine nerves."

As bearing on the discussion of the present question, it must be recollected that until recently it was not generally known or understood that antelexion of the uterus in the non-gravid state is a common affection, nor that antelexion of the gravid uterus is common. In the various text-books on obstetrics, anteversion of the gravid uterus is not even mentioned as a possible occurrence. This observation does not apply to some of the text-books published on the Continent. One of them, at all events (M. Cazeaux), alludes to it. I myself was not aware of the possibility of its occurrence until I had encountered a case in actual practice—a case which I described in the year 1865 at a meeting of the Obstetrical Society of London.* I believed it then to be a very rare disorder, but my observations since that time have convinced me that in a mild form it is very common; and further, that it is, as I have already fully stated, in a more severe form associated with obstinate sickness. Looking back to my notes of this first case I find it recorded that obstinate sickness occurred, although I did not then attach any particular signification to the symptom.

Antelexion of the uterus is more commonly found to be the cause of sickness in pregnancy than retroflexion, because it is rather more rare for the retroflexed uterus to become impregnated. Hence the result, clinically, that when obstinate sickness occurs it is infinitely more likely to be due to antelexion than to retroflexion.

The principal arguments in favor of the view that the vomiting of pregnancy is due to flexion of the organ may be briefly recapitulated: (1) Many women have no sickness, therefore it is not an essential part of pregnancy. (2) It is mostly limited to the first half of pregnancy, being,

* "Obst. Trans.," vol. vii., p. 170.

indeed, in many instances limited to the first two or three months. This is precisely the time during which the uterus is most liable to suffer from flexion; for when it rises into the abdomen such flexion can hardly occur. (3) It is produced almost universally by the standing or sitting position, which would be likely to intensify or exaggerate temporarily an existing flexion. (4) It is suspended, in all but the very severe cases, if the patient remains in bed for a day or two, during which time no such exaggeration of the flexion by standing, etc., occurs. (5) It occurs to a very marked degree in cases which are known to be the subject of flexion at the time of pregnancy. (6) Severe sickness and a decided tendency to abortion are very frequently associated in the same case, from which it follows that it is not unlikely, at all events, that the same cause is operative in producing both effects. (7) Lastly, I would mention my own observations as to the effect of positional treatment in cases of flexion of the gravid uterus, attended with sickness more or less severe. These are to the effect that since my attention has been particularly directed to the subject I have treated several such cases, and that I have found the sickness always to subside, or to undergo an immediate and remarkable amelioration, by so placing the patient or by so changing the position of the uterus as to favor the reduction of the existing flexion.

The history of these cases is, I believe, as follows: The uterus is, at the time pregnancy begins, in a state of flexion—generally slightly so, sometimes more marked in degree. The uterus expands, the walls increase in thickness, there is consequently an additional degree of compression of the tissues at the seat of the flexion. The natural effect of the increase of the expansion would be to unfold the uterus and straighten it, and in point of fact this result is achieved in most cases. But while this process is going on the tissues at the flexure are compressed unduly, particularly in certain positions of the body, and reflex nausea or vomiting may be thus produced.

TREATMENT OF THE VOMITING OF PREGNANCY.

In ordinary simple cases it will be found that this troublesome symptom can be effectually relieved by attention to certain rules as to the position of the body. The patient must be induced to maintain the horizontal position

as much as possible, and it will generally be found that this is sufficient. Attention should of course be paid to the state of the bowels. After the fourth month the tendency to sickness disappears in most instances, and the patient can then move about or sit upright without nausea. The degree to which it is necessary to enforce the horizontal position depends on the severity of the sickness.

In severe cases, where the above treatment has no sufficiently good result, the state of the uterus must be ascertained, and means should be taken to rectify any malposition which may be detected. Various mechanical devices may be put in force to aid the body of the uterus in rising up into its proper position. These will vary according as the body of the uterus is turned forward or backward. A simple air-ball pessary acts well in cases of ante flexion, and a well-fitted Hodge-shaped pessary is proper for cases of retroflexion. The action of the pessary must be aided by maintenance of the horizontal position. When the uterus is restored to its place a pessary may not be further required. Indeed a pessary may not be required at all if the uterus can be raised into its place by pressure with the finger, aided by positional treatment.

Where the sickness is not relieved by any of the above procedures, the case will probably be one in which the cervix uteri is very hard and unyielding. Under these circumstances the plan recommended by Dr. Copeman should be put into practice, and the cervix dilated artificially in order to remove the compression and tension around the internal os uteri. In my opinion, this treatment will be found really necessary in exceptional cases only; in my own practice I have only found the other and more simple measures fail in relieving the sickness in one instance.

In most of the cases recorded as treated by Copeman's plan the dilatation was easily effected, and in these instances probably it was not really necessary; but in two of them certainly the dilatation was more difficult to accomplish; in one of these a two-bladed dilator was employed for the purpose, in another a throat forceps. There is of course danger of producing abortion by the employment of any instrument passing through and beyond the internal os uteri. The finger would be the safest dilator, but in the really difficult cases it may be found, as in the case related at page 409, that the finger could not be introduced at all. Careful dilatation with a steel two-bladed dilator—on the principle of the one repre-

sented at page 365, but larger at the extremity of the blades—seems to me to be the best method of accomplishing the desired end, if the finger cannot be made to enter the cervix. The dilatation should not be rapidly effected, the object being to gently release the tension of the structures without exciting contractions of the uterus. When the os externum admits or can be made to admit the finger it would be best to employ the finger for the further dilatation of the canal higher up. It must be recollected that the cervical canal has a length of rather over one inch, and it appears necessary to dilate the canal at its upper extremity in order to give the necessary relief under such circumstances. The employment of the finger has one drawback—namely, that as a rule the finger cannot be readily introduced so far as the internal os uteri without passing a considerable part of the hand into the vagina.

The induction of premature labor could be practiced, as a last resource, when other measures are found to be of no avail and the life of the patient is at stake.

CHAPTER XXIX.

DISEASES AND INJURIES OF THE OS AND CERVIX UTERI.

The "Ulceration" Theory of Uterine Disease—Laceration of the Cervix Uteri: its Effects and Results—Dr. Emmet's Views on the Subject—His Method of Treatment—Importance of Eversion of the Cervical Lining: Causes of the same—Hypertrophy, Cystic Degeneration of the Os Uteri, etc.

Ulcerations of the Os Uteri—Erosions—True Ulcerations—Syphilitic Ulcerations.

DISEASES OF THE OS AND CERVIX UTERI.

"A whole generation of physicians," says Dr. Emmet,* "has been misled by the delusion of chronic inflammation and ulceration of the uterus—conditions which no one has yet been able to demonstrate on the dead body."

While, however, most of the so-called ulcerations and inflammations can be shown to be referable to changes of other parts of the uterus, we have of late learned that there

* *Loc. cit.*, p. 17.

are local conditions and diseases of the os and cervix which appear to require more attention than they have yet received—namely, the changes incident upon or following after the laceration of the cervix uteri during parturition. It is not a little remarkable that, largely used as the speculum has been in the investigation and treatment of the diseases of the uterus, cases of severe lacerations of the cervix seem to have been overlooked until a very recent period even by those who were most in the habit of employing the instrument.

It will be necessary to consider systematically the changes observed at the os uteri, and in so doing, to endeavor to show the relation of these changes to the diseases of the other portions of the uterus.

LACERATION OF THE CERVIX UTERI.

It not unfrequently happens that in the process of parturition the uterine cervix is more or less injured, the vaginal portion being lacerated in various degrees. But it cannot be said that these lacerations have been considered as constituting lesions of any considerable importance until recently. The subject has, however, attracted much attention in the United States during the last few years, and it is evident that the lacerations in question are very important factors in the production of diseases or discomforts referable to the cervical part of the uterus. Dr. Goodell, writing in 1879, states that about one sixth of the women who have had children, applying at the University of Pennsylvania Dispensary, have an ununited laceration of the cervix.

The second edition of Dr. Emmet's valuable work contains a full account of the subject, together with the results of his own observations and inquiries.

Since 1862 Dr. Emmet has practiced an operation in such cases. In 1874 he published a paper on "Lacerations of the Cervix Uteri as a frequent and unrecognized Cause of Disease." Roser,* it appears, first described what he termed "ectropium," of which there are two forms—one arising from cicatricial distortion, the other by the crowding forward and swelling of the mucous membrane. Roser indicates as causes, excessive fissures, also probably ob-

* "Archiv. f. Heilk.," Leipzig, No. 298.

stetrical incisions and gangrenous destruction of the os uteri. Roser regarded many of the cases of obstinate and inveterate hypertrophy thus arising as incurable; and as regards the cicatricial ectropium says, "One will scarcely be prompted to undertake a curative experiment."

Dr. Emmet thinks the term "cicatricial ectropium" not well-chosen, for "the flaps in the cervix are first rolled out and forced apart from the enlarged uterus resting on the floor of the pelvis, and this is increased as the circulation becomes obstructed, and as the mucous follicles undergo cystic degeneration. The condition at length becomes one

FIG. 122.*



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of partial strangulation, as in paraphymosis." He thinks the English term better than trachelorrhaphy or hysterotrachelorrhaphy. Of 500 fruitful women who have come under his care in private practice, 32·80 per cent who had been impregnated and now suffered from some form of uterine disease, were found to have laceration of the cervix. The injury on the left side is the most common, and double laceration the next. More than thirty per cent of the cases were attributed to tedious labor. He thinks rapid labor must be a cause to a greater extent than his figures prove. Sterility resulted in 71·34 per cent of cases

* The drawing exhibits results of double lateral laceration, showing also enlarged mucous follicles. The dotted line shows the outline when the flaps are brought together (Emmet).

where the cervix was so injured. Menstruation is in 51.59 per cent of cases increased (in length of days). The occurrence of cellulitis in connection with or as a consequence of laceration of the cervix is the most important and most frequent complication. Thus, of the 164 women last under observation, 33, or 20.12 per cent, had cellulitis at the time of the first examination.

The laceration is common, is often overlooked owing to softness of the parts, and it is most common in the middle line, anterior more common than posterior. If in the median line and limited to cervix it generally heals rapidly. It may of course pass into bladder and then may leave fistula. Laceration through posterior lip also heals rapidly and may not be suspected unless the inflammation extends sufficiently into posterior *cul de sac* to set up attack of inflammation. If cellulitis occurs at this point it always induces a most intractable form of retroversion, owing to the formation of a cicatricial band felt as a cord. This form of laceration seems from the history of the cases due to "posterior occipital" position.

When, however, the laceration is in a lateral direction and extends beyond the crown of the cervix, a condition arises which defeats the reparative power of nature. There will exist a tendency for the tissues to roll out from within the uterine canal when the upright position is assumed. The lips are forced apart by the weight of the uterus above, the posterior being pushed backward, the anterior forward. The angle of the laceration becomes the starting-point of an erosion, which gradually extends over the everted surfaces. The involution is retarded, the erosion bleeds readily as it extends, and the woman gets about; a profuse cervical leucorrhœa ensues, and the appearance of a frequent show causes the patient to seek relief. This laceration was until recently universally mistaken for ulceration, and it long baffled all treatment: improvement from rest was followed by relapse on attempt at exercise.

The mucous follicles of the cervix will be found to have gradually undergone cystic degeneration.

When the laceration is *double* and lateral, the flaps flatten against the posterior wall of vagina or floor of the pelvis, so that all appearance of laceration becomes lost. On digital examination the cervix is found to be larger than the body of the uterus. The relative size of such a cervix to the body of the uterus is about that of the top of

a half-grown mushroom to its stem. These flaps can be rolled in on using the speculum with the patient on the side, and by seizing the anterior and posterior lips of the cervix with a tenaculum in each hand.

There is a variety when the laceration is unilateral, giving obliquity to the uterus.

Treatment.—Dr. Emmet considers an operation is required where the condition is evident, where enlargement of the uterus still remains, or where the woman suffers from neuralgia.

The *preparatory* measures are, use of vaginal hot-water injections, use of a pessary to lift uterus from floor of vagina, application of tincture of iodine or iron twice a week with glycerine dressings, and pledgets of cotton, one before and one behind, to keep flaps together. It is often necessary to puncture the overloaded cysts and so reduce the strangulation and swelling; iodine is applied after this scarification.

The *operation* is best performed with the patient in the Sims position on the side. First the flaps are brought together by tenacula. Then the uterine tourniquet—Fig. 123, a special instrument for the purpose, constructed of a piece of watch-spring—is applied, for the hæmorrhage is often excessive. Emmet now only uses it when tissues are unusually soft; the use of hot water before the operation renders it less liable to occur.

The scissors is the instrument preferred to freshen the surfaces.

FIG. 123.*

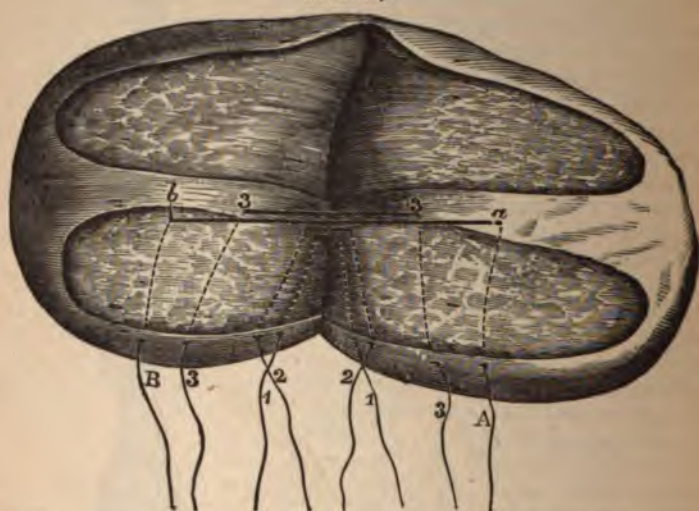


* Fig. 123, watch-spring tourniquet used by Emmet.

The uterus is drawn down, if possible, to outlet of vagina during operation. A short *round needle* is best, and wire sutures are employed as shown in the drawing. The sutures are removed in seven days. The patient is kept in bed for twelve days. The pessary, which is removed for the operation, is replaced soon after it is completed.

Dr. Emmet says that the hypertrophy and elongation of cervix will almost invariably be found due to laceration of cervix uteri, and the remedy is to repair the laceration.

FIG. 124.*



He denounces amputation with scissors, knife, or cautery, as malpractice, and denounces, as most uncalled for, cautery or caustics to heal a so-called ulceration. "Amputation of the cervix or the repeated application to it of cautery or caustics, will maim any woman and most likely render her sterile, and for the want of the support which the cervix normally affords she will be liable to suffer from displacement of the uterus.†

At the Cambridge meeting of the British Medical As-

* The drawing (Fig. 124) shows the shape of the raw surfaces after denudation (Emmet).

† *Op. cit.*, p. 483.

sociation, held 1880, Dr. Montrose A. Pallen of New York exhibited instruments employed by him in repairing the lacerated cervix. In his operation scissors of various shapes are employed to facilitate proper denudation. Dr. Pallen strenuously recommends the operation, and expresses his conviction of the necessity and advantages of the operation in suitable cases.

Looking over the records of my own cases, I find cases in which lacerations of the cervix have been noted as being present. From what I now hear of the cases related as observed in America, it seems evident that in developing the subject and pointing out how the lesion is to be remedied, our transatlantic brethren have done a good service to gynæcology. I believe Dr. Playfair was the first to perform this operation in England, and he has recently communicated a paper on the subject to the Obstetrical Society of London. I have myself successfully performed it, and have come to recognize it as a most necessary and valuable operation.

[Where the cervix is much engorged and very vascular,

FIG. 125.*



* Fig. 125 shows an instrument (reduced in size) made by Meyer & Meltzer, admirably adapted for holding the uterus during the operation,

* Fig. 125 a.



we are sometimes annoyed at the profuse bleeding which accompanies the operation. Dr. Cleveland's saw is effective in such cases. It cuts with a backward stroke only, and is to be used as an adjunct to the scissors.]

A severely lacerated cervix implies a removal of the proper support to the body of the uterus, and dislocation of the organ is no doubt favored thereby. A further effect is the exposure, the friction, the irritation of the lining of the cervix, resulting in abrasion, bleeding, hyper-secretion, etc., of the irritated surface. By elevating the uterus the latter class of evils is greatly lessened; so much so, in many cases, that the laceration itself becomes, or appears to become, a minor evil. Dr. Emmet's account conforms with this view; and it is evident that, while considering it necessary to repair the cervical laceration, he found it also necessary in many cases, both before and after the operation, to support the body of the uterus by a vaginal pessary.

An important practical question is to determine how far *eversion of the cervical mucous membrane* is possible without laceration of the cervix. In a considerable number of cases eversion arises in connection with cervical laceration, but very extensive eversion may occur without such laceration. As a rule, in long-standing cases of acute flexion, there arises a thickening, swelling, and eversion of the os uteri on the anterior or posterior aspect, and this may even occur in patients who have not had children. Thus, in ante-flexion cases the anterior side of the os, in retroflexion cases the posterior side, becomes swollen and the mucous membrane expands. In multipara it is most liable to occur undoubtedly, but my observation enables me to say that it may occur often in cases where there has certainly been no laceration.

Hypertrophy, cystic degeneration of the lips of the os uteri, eversion of the mucous membrane, abrasion or erosion of the mucous membrane so everted, are all liable to be met with, and when excessive in degree may be found to have originated in a lacerated cervix, while in other cases

* The double-edged cervical saw of Dr. Clement Cleveland of New York,

they result from long-standing congestion of the lips of the os uteri, the primary cause of which has been a severe flexion of the uterus. In some cases we find the os uteri represented by two rounded protuberances, hard and firm, red and angry-looking on the cervical aspect, irregular as regards the surface from nodular swellings the result of cystic degeneration, and secreting freely a sanious, yellowish fluid. The cystic degeneration, as it has been termed, appears to be the result of overgrowth and distension of the Nabothian follicles. In process of time the lips of the os have become hypertrophied, hardened, and otherwise diseased, and the two factors which *singly* or *jointly* operate in bringing about this state of things appear to be chronic flexion of the uterus and laceration of the cervix during parturition.

The opinion has been expressed by more than one authority in America that the existence of laceration of the os uteri constitutes predisposition to cancer of the os uteri, and that for this reason, if for no other, the lesion in question is one demanding operative interference. (Further remarks on this subject will be found in a later chapter, on Cancer of the Uterus.)

ULCERATIONS OF THE OS UTERI.

After what has been said in reference to laceration of the cervix and eversion, due either to this injury or to the existence of flexion, the consideration of the subject of "ulcerations" of the os uteri is simplified.

Simple eversion of the cervical lining has been frequently taken to be "ulceration." Dr. Farre some years ago * said: "In the more common degree of hypertrophy with eversion, a crescentic protrusion only of the cervical lining occurs. The unevenness of the surface caused by the slightly swollen and prominent rugæ, and as often by the numerous little depressions consisting of enlarged mucous crypts, according as one or the other of these is the predominant normal structure in the cervix, gives to the part during life the appearance of a raw and granular surface, while the natural boundary between the lower edges of the cervical canal and the lips of the os tinæ being now transferred on the latter in consequence of this eversion, an abrupt to

* "Cycl. An. and Phys.": article Uterus

semicircular line becomes visible, which, while it only indicates the natural termination here of the vaginal epithelium, is frequently mistaken for the margin of an ulcer." The stretching of the parts, which is sometimes produced by the mere introduction of the speculum, may give rise to this kind of eversion of the lining of the cervix, whenever the os uteri is a little lax and soft, and slightly open.

Erosions of the everted cervical lining are not very uncommon, but they rarely pass into the state of true ulceration. The loss of tissue involved is generally merely removal of the epithelium of the part affected, the vascular or proper tissues underneath being unaffected. The removal of the epithelium, however, leaves the villi uncovered, and these are apt to undergo hypertrophic changes, and increased vascularity also results. What is termed a "granular" change is sometimes noticed in cases where the abrasion or erosion has been in existence for some time. During pregnancy, as was observed by Cazeaux some years ago, the villi of the cervical mucous surface undergo hypertrophic changes, and are more vascular than usual. Moreover, they readily bleed when touched, and these "physiological" changes (for such they are) must not be confounded with ulceration or erosion produced by disease.

Erosions of the everted cervical lining appear to be in great part due to the friction of the surface against the vaginal floor produced by the movements of the body. A great secretion of fluid often occurs in cases of this kind, the fluid being ichorous, or watery, or sanious, according as the blood-vessels of the exposed villi are lacerated or not. I have observed a tendency to exfoliation or erosion of the mucous membrane at the os externum, in cases of chronic flexion with the retentive form of leucorrhœa. Here the retained uterine secretions become irritating, and this irritation probably has an eroding effect on the delicate mucous membrane at the os uteri.

True ulcerations of the vaginal portion of the cervix uteri are sometimes met with. They are generally associated with enlargement and hypertrophy of the cervix uteri, whatever may be the cause of that enlargement; or with those affections of the uterus usually classed under the term "prolapsus uteri." They are produced by the mechanical irritation to which the prolapsed cervix is exposed, and have all the characters of ordinary ulcerations,

Another form of ulceration of the os and cervix uteri, which is rare, is by some authors believed to be of cancerous nature, by others to be of *tuberculous* nature. Dr. West, in whose work * will be found a careful *résumé* of what has been said by different authorities on the subject, believes that these intractable ulcerations are instances of epithelial carcinoma; and he agrees with Robin in considering that this kind of ulcer is to the uterus what lupus or cancrroid ulcers are to the face. There appears to be no reason, however, why both sides should not be right, or for denying that both tuberculous ulcers of chronic nature and lupoid disease of the cervix uteri may be witnessed, though not of course in the same individual. It can very rarely happen that this question will arise practically for determination, these intractable ulcerations being very uncommon.

Syphilitic Affections, Ulcerations, etc., of the Os and Cervix Uteri.—Concerning true chancre—primary syphilitic ulcer—of this part, there is but little difference of opinion. It is pretty well understood that it is very rare, although it has been observed. Chancre of the os or cervix uteri presents an appearance like that of chancre observed elsewhere; it is said that there is a greater disposition on the part of the ulcers here situated to bleed. The only conclusive evidence of the nature of the ulcer would be its reproduction by inoculation.

Respecting *secondary syphilitic* eruption, or ulceration of the os and cervix, there has been much discussion, nor is it at all settled how frequently ulceration is present in individuals affected with secondary syphilis. It does not appear that there is anything peculiar about the character of the ulcerations present in these cases, or which would enable us to say at once that such and such an appearance was due to syphilis. My own observations induce me to agree with Dr. Tyler Smith, who held that "in almost all cases in which leucorrhœa and disease of the os and cervix uteri are present in women suffering from constitutional syphilis, the uterine symptoms are a genuine manifestation of the constitutional or secondary disorders."[†]

The diagnosis of secondary syphilitic ulceration of the os and cervix will be materially influenced by the presence or absence of a syphilitic history in the particular case, and before proceeding to form a decision on the point all the

* *Op. cit.*, p. 361.

† "On Leucorrhœa," p. 98.

antecedents of the patient must be carefully scrutinized. The effects of anti-syphilitic remedies would frequently assist us in coming to a conclusion.

Treatment of Ulcerations and Hypertrophy of the Os Uteri.

—An exceedingly important element in the treatment of these cases is *rest*, and careful ablution at frequent intervals with warm water. It frequently happens that, by these measures alone, the size of the os uteri is very greatly diminished (see Treatment of Congestion of the Uterus, page 139), and in all cases, whether subsequently requiring operative treatment or not, these measures may be advantageously carried out. Styptic applications should be subsequently employed; and a solution of nitrate of silver, or tannic acid, or dilute iodine tincture, is useful in further reducing the hypertrophy (see page 142).

CHAPTER XXX.

CHRONIC INVERSION OF THE UTERUS.

CHRONIC INVERSION OF THE UTERUS.—Causes, Effects, and Varieties.
DIAGNOSIS.

TREATMENT.—Reduction by Systematic and Continuous Pressure aided by Anæsthesia—Treatment by Excision.

We are here concerned only with cases of chronic inversion of the uterus. The consideration of the condition in a recent state belongs to the domain of obstetrics proper.

Inversion of the uterus may occur during, or soon after, parturition, and this is its most frequent cause; but it may occur also in connection with the presence of fibroid growths—polypi—attached to the internal surface of the organ, and thereby distending it. It may be partial or complete. In its complete form it may arise after parturition; polypi generally occasion an incomplete form of the displacement. When there is complete inversion, the whole organ is turned inside out; the uterus lies wholly in the vaginal canal, and in recent cases projects considerably outside the vulva. When occurring in connection with parturition, the uterus gradually diminishes in size, though less quickly than under ordinary circumstances, and at the end of a few months the uterus may be wholly within the vagina, but completely inverted.

The symptoms and effects of inversion of the uterus are generally of a striking character, but not invariably so. Hæmorrhages, and almost incessant loss of blood in smaller quantity, are usually observed. Pains of a dragging character, and a sense of great discomfort more or less continuous, are experienced by the patient, these effects being not seldom of a very aggravated character.

The patient frequently becomes very anæmic, and there may be great general prostration, breathlessness, and loss of power of locomotion, with œdema of the lower extremities, etc. Chronic inversion of the uterus may exist for many years; cases of twenty-five or thirty years' duration are well authenticated.

In cases of inversion of the uterus a tumor is felt occupying the vagina, which varies in size according to the degree of the inversion and the time which has elapsed since its occurrence. Thus, if the inversion be recent and complete, the tumor in the vagina may be so large as to project beyond the vulva; but if some weeks have elapsed, it may be no larger than the fist, although still complete. The tumor is smooth, uniform, and no opening is to be detected on the surface. On digital examination, it is found that the vagina terminates above, round the pedicle of the tumor, in a perfect *cul de sac*, and the surface of the tumor is actually continuous with that of the vagina. At the point where the os uteri should be situated this pyriform tumor projects downward into the vagina. The tumor itself is hard and firm, and resistant, when the inversion has lasted a few weeks. If the patient have been recently delivered, if a tumor has occupied the vagina since delivery, and if, further, it be known that there was no tumor previously, the diagnosis is not usually difficult to establish, provided the inversion be complete. This statement is, however, not quite universally true, for pregnancy may be associated with polypus, and the polypus may be thrust down into the vagina immediately after the expulsion of the child. Gooch and others have related cases of this kind. There is no possibility, in complete inversion, of passing the finger above the pedicle of the tumor, nor can the uterine sound be made to pass in this direction. The symptoms attending the production of inversion during labor are characteristic: excessive pain—which may, however, be absent—prostration, syncope; the uterine tumor is no longer felt above the pubes; hæmorrhage is usually observed. Inversion may

occur just at the end of labor, or a few days after, from incautious exertion on the part of the patient. Inversion of the uterus usually gives rise to frequent and profuse hæmorrhages, together with great discomfort and pain; but it does now and then happen that the symptoms are not so urgent as to attract much attention until the disease has lasted for some time. That the symptoms and history of the case are not always demonstrative of its true nature, is proved by the fact that inversion of the uterus has been frequently looked upon and treated as polypus.

With reference to the *diagnosis of complete inversion from polypus*: in both cases the tumor is generally more or less pyriform; in both cases it is hard, resistant, smooth; in both the tumor terminates above by a constricted portion; in both there are hæmorrhage, leucorrhœa, and symptoms produced by pressure on the adjacent viscera; but in the case of inversion, neither the sound nor the finger can be passed upward beyond the pedicle of the tumor, whereas, in the case of a polypus projecting down into the vagina from the interior of the uterine cavity, an instrument can be passed into a cavity beyond the neck of the tumor; the neck of the tumor being encircled by the os uteri, the sound can be made to pass into the interior of the uterus. This distinction is not a perfectly reliable one, for there is occasionally a difficulty in detecting the cavity above when it really exists,* and sometimes there is found to be adhesion of the sides of the polypus to the adjacent wall of the vagina or to the interior of the cervix uteri (West, Blundell); and, further, it may happen that the polypus grows from a part of the uterine cavity close to the orifice (Gooch). It is said that in cases of inversion the tumor is very sensible; that this sensibility is wanting in cases of polypus; that the surface of the inverted uterus is rough, whereas the surface of a polypus is smooth; but no reliance can be placed on such supposed distinctions. If an examination be made within a week after the labor, the fact that the normal uterine tumor is absent from the hypogastric region, associated with that of the presence of a rounded firm tumor in the vagina, will demonstrate the nature of the case; at a later period this remark would not hold good, or at least in the same degree. Another mode of examination, enabling us to distinguish between inversion and polypus, is the com-

* See *Lancet*, 1827-28, vol. i., p. 327.

bined examination by the rectum and by the bladder—*i.e.*, the finger introduced into the rectum and a sound into the bladder, by which means an absence of the body of the uterus from its normal position can be substantiated (Arnott).

In cases of *partial inversion of the uterus* the difficulties as regards the diagnosis are more considerable than when the inversion is complete. Here the pedicle of the tumor is encircled by the os uteri, as observed when a polypus projects downward from the uterus into the vagina. In cases of partial inversion, however, the sound cannot be passed so far beyond the encircling band formed by the os uteri as usual, whereas in cases of polypus the cavity may be even longer than ordinary. A complex condition has been now and then observed, in which the diagnostic mark alluded to might fail; that, namely, in which there is a polypus of the uterus forming the lower part of the tumor, this tumor having dragged down the fundus uteri with it and produced partial inversion, where, in fact, the two conditions, polypus of the uterus *and* inversion of the uterus, are associated. Dr. McClintock* has directed attention to a new diagnostic sign of the presence of inversion. It is this: When the case is one of inversion, on drawing the tumor downward the lip formed by the os disappears; on ceasing this traction the lip is again evident. A very careful consideration of the previous history, combined with examination of the parts, are necessary to come to a correct conclusion in these doubtful cases. The tumor due to a partially inverted uterus is hard and firm, like a fibrous polypus; the symptoms produced by it are pretty much the same—hæmorrhages, discharges, etc.—but there is more pain, more discomfort to be looked for in the case of inversion than when there is only a polypus present. Again, the double examination by the rectum and bladder is very important in assisting the diagnosis, the more so as in cases of polypus partly projecting from the os—the particular cases, in fact, which most closely simulate this partial inversion of the uterus—the body of the uterus is generally more or less enlarged, owing to the presence of the polypus within it.

TREATMENT.

There has been usually found but little difficulty in replacing an inverted uterus when the condition has been de-

* *Op. cit.*, p. 91.

tected at once, as in the process of labor. When, however, the disease is a chronic one, the difficulties to be encountered are great. We must first speak of the treatment of cases of chronic inversion of the uterus of the simple and uncomplicated kind.

Formerly these cases were only treated by excision; the patient was relieved of the tumor and of her troubles by means of the knife, at the expense necessarily of loss of all power of bearing children subsequently, and not unfrequently at the expense of loss of life altogether. Happily art has stepped in to the rescue of these cases, and a method has obtained general adoption in the profession, by means of which the normal shape of the uterus is restored, even in long-standing cases. M. Valentin,* in 1847, reduced an inverted uterus after the lapse of upward of a year from the date of its occurrence. The reduction was performed by the aid of the two hands, the left placed over the hypogastric region, the right in the vagina, the tumor being grasped by the finger and thumb of the right hand. These manipulations were performed while the patient was under the influence of ether; and after application of continuous pressure in this way for about ten minutes the reduction was accomplished, and the patient completely cured. The etherization in this case enabled the patient to bear the operation, it having been relinquished previously owing to the great pain produced. Mr. Canney,† of Bishop Auckland, reduced a chronic case of inverted uterus of five months' duration, in 1852, under the influence of chloroform, and by manipulations pretty much the same as those described above. M. Barrier's‡ case, also in 1852, is the next reported, the duration having been considerable. These three cases had escaped my notice in preparing the first edition of this work. Dr. Tyler Smith,§ in 1856, successfully reduced an inverted uterus of twelve years' duration after several days' treatment, the uterus being pressed and moulded by the fingers for about ten minutes night and morning. After repeated trials, the cervix uteri, which was firmly contracted round the neck of the projecting tumor, began to yield a little, and the tumor could be slightly sunk in the os. After each operation, a large india-rubber air-

* Quoted from *Gaz. Méd.* in Ranking's "Abstracts," vol. vii.

† Ranking, vol. xvi.

‡ Ibid.

§ "Medico-Chir. Trans.," vol. xlii., p. 183.

pessary was placed in the vagina, and inflated to as great an extent as the patient could bear. The air-pessary was worn, with few exceptions, day and night. "After more than a week of these proceedings," says Dr. Tyler Smith, the patient felt a good deal of pain through the whole of one night; and in the morning, when an examination was made, it was discovered that complete reinversion had taken place. A small air-pessary was afterward worn for a few days, and the recumbent position maintained. Subsequently the patient became pregnant.

The principle of the successful reductions effected in obstinate cases is to maintain a persistent pressure on the inverted part, or rather a combination of moulding and pressure by means of the fingers and thumb introduced into the vagina, counter-pressure being applied externally, and when this does not succeed, to apply a more continuous but less forcible pressure by means of an india-rubber air-pessary. The part which has been inverted last should be pushed upward first, as Dr. McClintock has very properly remarked. The uterus is capable of being readily moulded, and on this property of the uterus our attempts are to be based; sudden, too forcible, and too abrupt manipulations must be avoided. Chloroform or ether, as the reports show, are invaluable adjuncts in the treatment.

Dr. Marion Sims proposed, in difficult cases, to make a vertical incision through the uterine tissues on each side, at the part corresponding to the os uteri, so as to allow more easily of the reduction of the tumor. Dr. Barnes* also performed an operation on this principle successfully. The case was one of some months' standing, where continuous pressure had failed. He drew down the uterus and made three vertical incisions. The uterus was at once reduced by taxis, and the case did well. He recommended that in future two incisions only should be made, and that continuous elastic pressure (by water-bags) should be employed to restore the inverted uterus.

Dr. Emmet's method of reduction is as follows:

With one hand in the vagina, the fundus, in the palm of the hand, is firmly grasped and pushed upward, the fingers then immediately separated to the utmost; at the same time the other hand is employed over the abdomen in the attempt to roll out the parts forming the ring by sliding the

* "Med. Chir. Trans.," vol. liii.

abdominal parietes over its edge. This process is continued some time, and later on the tips of the fingers are used to complete the re-inversion. Dr. Emmet has also employed sutures for closing the lips over the fundus after a partial reduction, to preserve temporarily the advantage gained.*

In Dr. Emmet's operation an important element is the application of counter-pressure over the uterus from above, and the taxis performed in this way has proved very successful in his hands. Dr. Tate, of Cincinnati,† records an interesting case where counter-pressure was made above by two fingers carried up in the rectum, the fundus being then pushed up by the two thumbs. As this procedure tired the hands, the urethra was dilated and one finger of the other hand inserted so as to get counter-pressure in front as well as behind. The reduction was finally effected by pressure from a stem placed below instead of the two thumbs. Silver wires were placed in the os for three days.

Dr. Jas. P. White states that his experience is that "well-directed pressure upon the fundus, if continued long enough, will in all cases, unless prevented by firm adhesions, result in restoration or reposition, no matter how much time may have elapsed since inversion has occurred."‡

His method of reduction is as follows: The operator kneels on the ground, the patient is placed on the back at the edge of the bed, anæsthetized. The uterus is then manipulated by the right hand introduced into the vagina entirely. The hand grasps the uterus and presses upon the tumor; at the same time Dr. White's apparatus is brought into play. It consists of a hard rubber cup and stem, the latter a little curved; the stem ends externally in a pyramidal-shaped spiral spring of steel wire. The cup is placed against the fundus uteri, the base of the spring against the breast of the operator. The left hand of the operator is used to make counter-pressure on the upper part of the uterus through the abdominal walls.

Dr. White relates three typical cases, of six months', three years', and twenty-two years' duration respectively; in the last case reduction was effected in less than two hours. Dr. White says he has performed the reduction successfully in this way in nine other cases.

* *Op. cit.* (2d edit.), p. 424.

† *Cincinnati Lancet and Observer*, March, 1878.

‡ "Transactions of Philadelphia Medical Congress," 1876.

The more recent experience of various operators would seem to be in favor of reduction of the inverted uterus by a process of continuous elastic pressure spread over some little time, in preference to a more rapid and summary method of procedure. And various methods have been successfully adopted of applying such continuous elastic pressure.

FIG. 126.*



Thus Dr. Barnes used a stem provided with an elastic cap for the purpose of keeping up the pressure. (This was employed after incising the os uteri at two or three points in its circumference so as to relax or weaken the constriction: incisions one third of an inch deep and two thirds of an inch long.)

* White's method.

Mr. Lawson Tait has employed a stem with a cup-shaped end, six inches long, and pressure is made by means of elastic ligatures fixed to the stem outside the vagina and attached to a band round the waist.

Dr. Aveling* has improved the stem used as above by giving it an external perineal curve. Dr. John Williams records a case thus treated; a cup of vulcanite was mounted on a metallic stem having a perineal curve, and to it affixed four elastic bands, two carried in front and two behind.

FIG. 127.†



At the end of twenty hours removed, partial re-inversion having been effected. The instrument re-applied and bands tightened, and after another twelve hours the operation completed. In this case the inversion was of two years and four months' duration. Dr. Aveling records two cases of his own, and states that the average time occupied in three cases in reducing the uterus was forty hours only.‡ A case of inversion is recorded by Dr. Gervis,§ treated in a similar

* "Obst. Journ.," lxxiii., p. 21.

† Fig. 127 shows the shape of Dr. Aveling's instrument; the line A B the direction of the pressure.

‡ *Brit. Med. Journ.*, Sept. 6, 1879. § "Obst. Journ.," lxxx., p. 373.

way after other methods had been only partially successful. Dr. Wing, of Boston, U. S. of America, reports a case of fourteen months' standing cured in three days by the above method.

Reduction after Abdominal Section.—Dr. Thomas, of New York, performed a remarkable operation in an obstinate case. He cut into the abdomen, dilated the *cul de sac* of the uterus from within the abdomen, by a steel dilator, and thus

FIG. 128.*



reduced the inversion by the taxis. Recovery followed. Previously the pressure and incision method had failed. In three other cases, by ingenious variations of the pressure treatment, Dr. Thomas succeeded in restoring the uterus.

The treatment of cases of *inversion of the uterus associated with polypus of the uterus* requires a few words. When the polypus has a large basis of attachment, the fundus may

* Fig. 128, from a preparation in University College Museum, represents inversion associated with a large polypoid tumor. The tumor has produced complete inversion of the uterus and of the vagina,

be so drawn downward that what appears to be the pedicle of the polypus is really the uterus itself. Thus a specimen was exhibited at the Pathological Society, and referred to Dr. Marion Sims, Dr. John Ogle, and myself, for examination, in which such a tumor had been excised, and a circular piece comprising the fundus uteri had been removed with it.* The case shows the necessity for great caution in excising tumors projecting through the os uteri. In most cases where a polypus projects into the vagina from the uterus, it draws down the wall of the uterus a little, and when the pedicle is broad this partial inversion of the uterus is more likely to be extensive. The use of the sound would in such cases give valuable information.

CHAPTER XXXI.

PROLAPSUS OF THE UTERUS.

GENERAL REMARKS on the Pathology of the Subject—Mechanism by which the Uterus is kept in its Place—The various Conditions present in Cases of Prolapsus—Illustrations of various Conditions and Complications—Mechanism of the Process—Relation to Cystocele, Rectocele, and Flexions—Hypertrophic Elongation of the Cervix and its Varieties—Symptoms and Progress of Prolapsus.

DIAGNOSIS.

TREATMENT.—Must be adapted to the Peculiarities of the Case—Treatment of Prolapsus from Hypertrophy of the Cervix—Excision of the Part—Other Forms of Prolapsus—Measures directed (1) to the Condition of the Uterus; (2) to the Condition of the Uterine Supports—Artificial Means for maintaining the Uterus in its proper Place in the Pelvis, by Pessaries, by external Appliances, by Constriction of the Vaginal Aperture, or the Canal itself—Description of various Operative Procedures.

Prolapsus, or falling of the womb, is an affection to which women are, in one form or other, exceedingly liable, and it is one which is not unfrequently productive of very much inconvenience and distress. Intimately connected as the uterus is with the adjacent organs, its displacement downward is almost necessarily attended with more or less displacement of these organs also. Prolapsus of the uterus, then, is rarely a simple affection; and, for this reason, it will be convenient

* "Trans. of the Pathological Society," vol. xvi., p. 219.

to consider together the various displacements associated more or less frequently with it, viz., prolapsus of the uterus, prolapsus of the bladder (cystocele), prolapsus of the vagina, and prolapsus of the rectum through the vagina (rectocele).

The term "prolapsus" is in this country generally used to designate all grades of the displacement. In America it appears that "prolapsus" means falling of the womb within the vagina, while "procidentia" is used to designate its appearance externally to the vaginal aperture. In this place one term—prolapsus—will be applied to both these conditions.

The anatomical relations and connections of the uterus are of the utmost importance in all that concerns a right understanding of the subject of prolapsus. The uterus is supported by a complex mechanism, the various parts of which are mutually dependent, and a failure or weakening of one leads to derangement of the others. It frequently requires no little attention to ascertain where the "break-down," literally as well as figuratively, first happened; but unless the investigation be successful, we can have no true basis for our curative efforts.

Natural Supports of the Uterus.—In a former chapter, the structures by which the uterus is retained in its place have been described, but principally in reference to the prevention of what have been termed the minor displacements of the uterus (see p. 167). We have now, however, to consider how far these natural supports of the uterus prevent those further and more severe displacements which come properly under the head of prolapsus or procidentia of the organ. The *peritoneum* serves little purpose in restraining the downward movement of the uterus. The *round ligament* has an influence which is exerted for the most part in restraining the movement of the fundus backward. Still in a case where the uterus had descended a little, it would aid in preventing further descent. The *utero-sacral ligaments* are so placed as directly to prevent falling of the uterus. They are firm, fibrous bands, passing one on each side straight between the cervix uteri and the sacrum. Dr. Farre justly drew attention to the importance of these ligaments. The *broad ligaments*—not, properly speaking, ligaments, being simply the mesentery of the Fallopian tubes—have, in the early stage of prolapsus, little restraining effect as regards descent of the uterus, but they would necessarily assist in

checking its further progress downward. The *utero-vesical ligaments* connect the uterus very closely with the bladder, and, supposing the distended bladder to be fixed, it would

FIG. 129.



be almost impossible for the uterus to descend below its proper level in the pelvis. The bladder, however, is not so fixed. A movement of the whole bladder downward necessarily carries with it the uterus, and correspondingly the uterus cannot descend without carrying with it that por-

tion of the bladder with which it is connected, viz., the posterior part. Lastly, the *general connections* of the uterus with the adjacent parts, and constituted by a very considerable quantity of blood-vessels and connective tissue, form, as Dr. Savage* has shown, a very important additional apparatus for restraining undue mobility of the uterus. Dr. West considers that the canal of the vagina contributes very much to supporting the uterus in proper position. The researches of Mr. D. B. Hart, referred to at p. 169, explain how the vagina prevents prolapsus of the uterus, and the importance of the firm support which the normal perineum gives to the floor of the vaginal canal.

In his eleventh plate,† Dr. Savage has delineated experimental observations (*post mortem*) on the ligaments of the uterus and the resistance they offer to descent of the organ. Moderate traction on the uterine cervix by a vulsellum was found to compress the bladder against the pelvis, to straighten and put on the stretch the utero-sacral ligaments, to curve, but not to stretch, the round ligament. Cutting through the utero-sacral ligaments allowed the uterus to descend still lower, until the os uteri was just outside the vagina: the results were that the bladder was drawn down closely following the uterus, the rectum not disturbed, the broad ligament now for the first time put on the stretch. Dividing the broad ligament allowed of the further descent of the uterus to the extent of an inch: but the sub-peritoneal pelvic cellular tissue, particularly where it surrounded the uterine blood-vessels, and where it was strengthened by additional trabecular filaments, was found to restrain further descent of the organ. Complete prolapsus was produced on the yielding of the pelvic reflexions of the broad ligament. The round ligament was last put on the stretch.

The perineum is undoubtedly a most important structure in relation to the prevention of complete or partial uterine prolapsus and procidentia. This has been forcibly put forward by Dr. Thomas in his last (1880) edition, and Mr. D. B. Hart's views are in accordance therewith. Dr. Thomas, in his latest edition, gives drawings exhibiting the shape and size of the perineum to illustrate his views.

* "Illustrations of the Surgery of the Female Generative Organs," 1863. Plate IX.

† *Op. cit.*

He regards the perineum in the normal state as a concavo-convex triangle, anteriorly supporting the inferior wall of the vagina, while its posterior side supports the anterior wall of the rectum. The accompanying drawing (Fig. 129) is one published by myself in the "Mechanical System of Uterinæ Pathology" two years ago, and the shape and size of the perineum here shown is closely in conformity with that represented by Dr. Thomas in his lately published work.

The foregoing suggests valuable inferences regarding the controlling powers *quoad* simple descent of the uterus; but it must be recollected in applying these inferences that they suppose a pre-existent normal condition (and I would include shape) of the uterus itself.

In point of fact prolapsus of the uterus is a complex event. It is impossible, moreover, to consider prolapsus apart and separate from the subject of flexions; from an etiological point of view at least. I have already discussed, under the head of Flexions, the mechanism of those changes in the shape of the organ, and the relation of the uterine ligaments to flexions. We have, therefore, now, amongst other things, to discuss the relation between flexions and prolapsus in its various forms and degrees.

There are two principal elements in existence in every case of prolapsus, sometimes separately, sometimes conjointly.

These are—(1) increased weight or altered shape of the uterus; (2) impairment or destruction of the supporting structures below the uterus. The foregoing classification will not include, of course, every imaginable case: for instance, hypertrophic growths downward from the cervix uteri.

The relation between the various casual elements in ordinary cases is most easily illustrated by descriptions of actual cases.

Thus—(a) During a labor the perineum is torn, the vaginal aperture increased in size; the floor of the bladder, not so well supported as it should be, comes to occupy a position nearer the ostium vaginæ than usual. Slight exertion increases this descent of the bladder, the uterus follows it, and soon comes to take a position lower in the pelvis than usual.

Or (b) concurrently with such enlarged perineal aperture the patient is the subject of defective involution of the

uterus. She moves about too soon after labor, the uterus becomes first a little anteverted, then anteflexed; and the bladder, less supported than usual below and more pressed upon from above, gives way. The result is, perhaps, confirmed anteflexion and cystocele.

A further stage may be witnessed, after the lapse of many years as a rule, viz., complete descent of the whole uterus external to the vulva.

Or (*c*) the patient is unmarried. Anteflexion of the uterus exists. The bladder is slowly pushed downward,

FIG. 130.*



and spite of the uninjured ostium vaginæ it is gradually protruded.

Or (*d*) the patient has shortly after labor acquired a retroflexion of the uterus. The labor has been attended with laceration of the perineum also. Soon the uterus falls lower in the pelvis, the retroflexion becoming at the same time intensified, and first of all the posterior vaginal wall is protruded at the vaginal aperture (rectocele), then follows the fundus of the uterus. At a later stage of the

* Fig. 130 represents a case in University College Hospital, æt. 42. The patient had had two children—the last nineteen years ago. The case was cured by operation.

affection the whole uterus may pass outside the vulva, remaining still, however, retroflexed (see Fig. 130).

Or (*c*) the lower part of the uterus becomes elongated, the effect being that the cervix of the uterus finally becomes external to the vulva, bringing with it the bladder more or less completely. These constitute a class by themselves, and will be presently more fully described.

These illustrations might be easily increased in number.

The foregoing illustrations are put forward with the view of showing the various "first steps," as they may be termed, toward prolapsus. *Occupation* and *age* are two elements of considerable importance in altering the character of the prolapsus in different cases. An occupation involving much standing is certainly provocative of its occurrence in a very marked degree. And as age advances, if the quantity of fat in the body diminishes, the uterus is more apt to descend than it was before.

Violent strains are evidently capable of producing prolapsus instantaneously, even when the parts are previously healthy and parturition has not occurred; but ordinarily the action of strains is more indirect, the first effect being to produce a flexion, which flexion is the starting-point, ending finally in prolapsus. Flexions bring about prolapsus very frequently in the following manner: The process of defæcation is impeded by the flexion; the patient finds it necessary to strain very much to procure an evacuation; the whole pelvic contents are thus pressed downward; the supports of the uterus stretched; the flexion intensified; and, by and by, the uterus itself escapes from the vulva.

Cystocele is observed, as already hinted at, chiefly in association with a ruptured perineum and an anteфлекed uterus, but it may occur apart from such injury of perineum, and in women who have had no children. Here the tumor which forms at and protrudes from the vulva is small and readily reduced. Cystocele is also witnessed when the cervix uteri descends externally. This remark applies to that part of the cervix which is connected so intimately with the bladder, and when this part of the cervix descends the bladder must come with it. When the whole uterus is outside the vulva, there must therefore be a considerable portion of the bladder protruded externally. But when the part of the cervix *below* the vaginal reflexion is, as sometimes happens, alone hypertrophied, and projects downward, perhaps in a conical form, through the

vulva, there is, under these circumstances, no necessity for a simultaneous descent of the bladder, and such cases are not usually complicated with cystocele.

Cystocele, though ordinarily not attended with more than discomfort when slight in degree, is liable to become a condition of torture to the patient. Thus a married woman just over forty, who had never had children, presented

FIG. 131.*

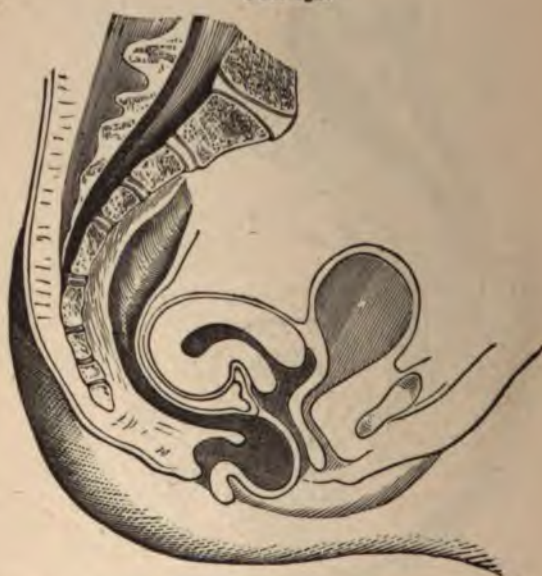


herself for treatment at University College Hospital. There was a tumor the size of one end of a hen's egg protruding, and composed of the bladder. It was sensitive to such a degree that the slightest touch gave excruciating pain. The tumor could not be kept up, intercourse had not been possible for years, and various means had been tried to relieve her; amongst other things, an operation

* Fig 131 represents anteversion associated with cystocele. The case is the one described in the text, where there was excessive hyperæsthesia of the prolapsed, thickened, and hypertrophied bladder.

consisting of removal of an area of vaginal mucous membrane had been unavailably performed. There I found the affection dependent on long-standing ante flexion of the uterus. The case was finally and completely cured by very considerably narrowing the vaginal aperture, but means were at the same time taken to prevent the descent of the fundus uteri anteriorly, which had evidently been the original cause of the mischief.

FIG. 132.*



Rectocele, and its relations to prolapsus, constitutes an important subject. Rectocele, which is a simple projection of a loop of the rectum through a defective vaginal outlet, generally arises from laceration of the perineum. It by no means always occurs in cases of lacerated perineum, and it is in fact rather rare by itself. It varies in degree, and I have generally seen it associated with retroflexion of the

* Fig. 132 represents the condition described in the text, the subject of which was a lady, *æ*t. 42, who had been suffering some years; the uterus was affected with chronic retroflexion. The rectum is represented in the condition it always assumed in the act of straining.

uterus, though it is not by any means the fact that cases of retroflexion are generally complicated with rectocele. In some instances the affection is one of the most painful character possible; the straining at stool required to evacuate the rectum is sometimes severe, and, when long continued, I have found it associated with an ulcer of the rectum, bleeding on the slightest irritation, and painful when

FIG. 133.*



touched to an extreme degree. The nature of these particular cases is liable to be misunderstood, but the explanation seems obvious enough. It is that the bend in the lower part of the rectum prevents the passage of the fæces,

* Fig. 133 represents a case of supra-vaginal hypertrophy of the cervix, the subject of which was a married woman, æt. 47. She had suffered from prolapsus for two years, and had been obliged to wear a box-wood pessary $3\frac{1}{2}$ inches in diameter to keep the uterus up. In Huguier's memoir similar cases will be found delineated.

which are impelled, day after day and month after month, with great effort, against that part of the rectum where the bend is, the result being to produce the ulceration, the bleeding, and other grave symptoms, sometimes to such a degree as to compel patients the subjects of them to declare that life is not worth having at such a price. In some cases, on the contrary, the inconvenience sustained from rectocele is less marked.

FIG. 134.



Hypertrophy of the uterus, and its connection with prolapsus, is a subject requiring a discussion by itself. Huguier,* in 1859, described and figured several cases designated as cases of hypertrophic elongation of the cervix uteri; and his researches have since led to a more accurate discrimination of the varying conditions met with in prolapsus.

Following his classification, we have cases of (1) Hypertrophic elongation of the part of the cervix above the

* "Mém. de l'Académ. Imp. de Méd.," tom. xxiii.

vaginal reflexion (see Fig. 133). (2) Cases of hypertrophic elongation of the infra-vaginal portion of the cervix. In both these cases the prolapsus which may occur is considerable ; but in the first case the bladder is of necessity prolapsed together with the tumor, while in the second (see Fig. 134) the bladder is not necessarily disturbed.

In both classes of cases the fundus uteri may remain in

FIG. 135.



its proper position in the pelvis, and it is obvious that, if there be still a considerable prolapsus, the uterine canal must be enormously elongated. So in point of fact it is, and the distance, as measured by the sound, may be found to be as much as four inches from the os to the fundus uteri ; in extreme cases more than this.

The cases of supra-vaginal hypertrophy are met with chiefly in laundresses and cooks, whose occupations involve long standing. The mechanism of the occurrence of this peculiar elongation of the cervix is curious. It would

appear that the elongation is due to the dragging of the vaginal portion on the supra-vaginal portion of the cervix, in consequence of which the organ becomes stretched. The bladder very probably descends first in these cases, either because the perineum is a little deficient, or because the fundus is inclined forward, and the effect of the descent of the bladder is that the cervix, which is intimately ad-

FIG. 136.



herent to the bladder, descends with it, the result being elongation of the cervix. This mechanism implies a fixation of the upper part of the uterus. In some cases the weight of the vaginal part of the cervix alone appears enough to determine this hypertrophic elongation, when the patient has been subjected to the influences of prolonged standing exertion.

We meet with all gradations of the affection. The accompanying figures represent actual cases. In Fig. 134 we have simple hypertrophic elongation of the infra-vaginal

portion in a young woman. In Fig. 135 is shown elongation of the infra-vaginal portion from a woman who had had children. In Fig. 136 we have hypertrophic elongation of the same portion in association with retroflexion, a rare combination.

I have seen cases in which the external tumor constituted by the prolapsed organs has been as large as the foetal head. Under these circumstances there is great thickening of the cellular tissue around the uterus. The organ itself is greatly thickened and hypertrophied laterally as well as longitudinally, and in some cases, together with the bladder and uterus, certain coils of the intestine pass downward and help to enlarge the tumor.

Huguier's statements as to the frequency of hypertrophic elongation of the cervix are not borne out by my own experience. In other respects, as regards the collateral conditions in these particular cases Huguier's account has seemed to be exact.

The foregoing represent, regarding prolapsus generally, the generalizations I have been led to adopt. The very great importance of flexions, as in many instances the starting-point of the displacement, is a matter which it seems desirable to make prominent.

Various secondary effects result from prolapsus. Thus, in cases of cystocele the bladder is evacuated with difficulty, retention of a small portion of urine is apt to occur, and chronic cystitis may be added as a complication. The uterus itself, when prolapsed, often becomes ulcerated and excoriated, broad patches, the size of the palm of the hand, raw and bleeding on the slightest touch, are observed round the os uteri, these ulcerations being produced by the friction of the tumor against the thighs. The tumor itself, from long exposure, becomes sometimes hard and leathery to the touch, the inverted vaginal mucous membrane losing the characters of mucous membrane and looking more like the adjacent skin. The discomforts connected with defæcation are great, and, as already stated, in the case of rectocele they may themselves become actually torturing. Needless to say, the general discomfort induced by the presence of a tumor at the vulva, changing in size from time to time, impeding locomotion, distressing the patient by giving rise to profuse leucorrhœa, occasional losses of blood, and in many other ways—all these constitute grave ailments.

Lastly, in some cases, the tumor may be so large and so much swollen that it becomes actually strangulated and mortification sets in; again, inflammatory adhesions may occur to such a degree round the pedicle of the tumor that its return is found difficult, and in a few cases impossible.

DIAGNOSIS.

All cases of prolapsus uteri have this in common, that the os uteri is the lowest point. In other respects, the variations observed are exceedingly great. In the most simple form of the affection the cervix uteri is felt rather lower than usual, and the vagina proportionately shortened. In its extreme degree, on the other hand, the uterus descends so low down as to be almost altogether outside the ostium vaginae; and in this case the vaginal canal is completely inverted, the bladder is dragged externally also, and the rectum may be displaced in like manner. Thus, in a bad case of prolapsus uteri we may have combined, descent of the uterus with prolapsus of the bladder and rectum (vaginal cystocele and rectocele).

If we find a conical, firm tumor, smooth on the surface, projecting downward in the vagina or beyond it, and the os uteri situated at, or close to, its extremity, the case is one of *hypertrophy and elongation of the vaginal portion of the cervix uteri*. With such a condition there is usually found no considerable amount of prolapsus of the vagina, and the finger encounters the *cul de sac* of the vagina in about its usual position (see Figs. 134 and 135). The shape of the tumor is generally conical, but it may be larger at the extremity than at the base; one portion of the lip may be larger than another, in which case the opening appears to be not quite at the extremity of the growth, and the os itself may be fissured and ulcerated according to the degree of irritation to which the part is exposed. The general shape, the firmness of the tumor, and the position of the os uteri, sufficiently distinguish it from other tumors occupying the vagina.

Hypertrophy of the Supra-vaginal Part of the Cervix.—In this class of cases there is prolapsus of the vagina, and the finger cannot consequently be introduced as far as usual. The use of the sound will render it evident at once whether the descent of the os uteri, bringing with it the vagina, is due to descent of the whole uterus, or to hypertrophy of

the lower part of this organ—the cervix. The attachment of the cervical part of the uterus to the bladder in front is such, that when the cervix is projected downward the bladder comes with it; the extent of the prolapsus of the bladder is, as a rule, dependent on the degree of the former. Fig. 137 (from Dr. Farre) represents such a condition. (See also Fig. 133.) In like manner, the rectum is liable, but in a less degree, to be prolapsed with the lower part of

FIG. 137.



the uterus; and the result is that in cases of extensive prolapsus of the cervix, whether with or without hypertrophy of the part, there is a soft tumor in front—the bladder—and a smaller one behind—the rectum—between which two the os uteri is situated. A combined examination of the rectum by the finger and of the bladder by means of the sound, will determine whether or not the fundus uteri is in its proper position; the use of the uterine sound gives information of a like character.

True prolapsus of the whole uterus may be found associated with ascites, ovarian tumors, or both, or with relaxation of the vaginal structures, consequent on frequent child-bearing.

Prolapsus, complete or produced by hypertrophy of the supra-vaginal portion of the cervix, could hardly be mistaken for polypus, inversion of the uterus, or large tumors growing from the os uteri, if attention were paid to the position of the os in reference to the body of the tumor. Cases of hypertrophy of the vaginal portion alone might possibly be confounded with a polypus projecting into the vagina from the interior of the uterus, in those instances in which the os uteri is distorted, partially effaced, or so altered as not to be recognized as such by a casual observer. I have known an instance in which a lady was treated for prolapsus and made to wear a pessary for several months, the tumor being a well-marked specimen of polypus, attached by a slender pedicle to the interior of the cervix uteri.

Prolapsus combined with Pregnancy.—In some rare cases the uterus, although prolapsed, becomes impregnated. It would be a serious mistake to use the sound in such a case, and to induce abortion. It is sufficient here to give this caution on the subject.

TREATMENT OF THE VARIOUS FORMS OF PROLAPSUS.

The various forms of prolapsus of the uterus, vagina, etc., having a different mechanism in different cases, the treatment necessarily varies. Success in treatment cannot be obtained until due importance is attached to the various elements concerned in the production of the prolapsus.

We may consider, in the first place, the treatment of those cases in which there is *hypertrophy of the cervix*—the prolapsus being for the most part due to, or constituted by, this hypertrophy.

(a) *Cases of Hypertrophy of the Vaginal Portion alone.*—It appears that in many of these cases the hypertrophy of the cervix may be very greatly diminished by appropriate treatment—viz., by rest, by frequent hot douches, and by the use of astringent applications. Further, that in a certain number of these cases the hypertrophy at the os uteri is due to laceration of the cervix and consequent hypertrophy and eversion. Cases of the latter description should of course be dealt with by the operation described in a former chapter.

The great length of the cervix sometimes appears to

be capable of undergoing great reduction by appropriate measures, particularly rest and absence of traction on the cervix. Still cases remain in which after proper treatment has been employed the only real cure consists in amputation of the enlarged cervix. The removal may be effected by the knife or curved scissors, by the wire or chain *écraseur*, by the galvano-caustic apparatus, or by Paquelin's thermo-cautery. The knife is the more expeditious and manageable; but the hæmorrhage from the cut surface is often very troublesome. An objection to the *écraseur* is that, unless the chain fits closely into the apex of the instrument, there is a liability of drawing into the instrument tissues which ought to be left uninjured. Hence, if the chain *écraseur* be used, the chain should be applied, not close to the summit of the vagina, but a little below this. Dr. Thomas describes in his last edition a pair of forceps with long teeth, by means of which the cervix is seized prior to the amputation, and the slipping upward during severance by the wire thus prevented. The galvano-caustic apparatus has, like the *écraseur*, the advantage of preventing hæmorrhage. On the whole, the course to be recommended is the use of the knife, or curved scissors, if the neck of the growth be very thick—the cautery being ready for use to arrest hæmorrhage, and the use of the chain or wire-rope *écraseur* (see Fig. 138), or the thermo-cautery when the neck of the tumor is smaller. Lint soaked in tincture of sesquichloride of iron on the cut surface, and carefully plugging the vagina by means of the speculum, as in ordinary cases of uterine hæmorrhage, will be effectual in arresting the bleeding in many cases. In any case, prior to performing the operation, the tumor should be gently pulled down as far as possible, to facilitate the necessary manipulations. It is a wise precaution to transfix the cervix *above* the line of the contemplated incision, and to pass a stout piece of string through it before performing the excision, for it often happens that the uterus retracts, and bleeding is thereby less under control.

Dr. Marion Sims has practiced a modification of this operation. This consists in covering the stump, as it may be termed, of the amputated part, by mucous membrane; the anterior half being covered with mucous membrane previously dissected off, and being made to lap over, as in the flap operation in ordinary amputation; and the posterior

half being covered by a flap similarly made from the under surface of the cervix. When the bleeding is trifling and readily checked, this procedure renders the operation more neat and perfect. If styptics have to be used, the covering of the stump with mucous membrane will be useless, as no union can occur.

(b) *Cases of Hypertrophy of the Supra-vaginal Portion of the Cervix Uteri.*—Cases of hypertrophic elongation of the cervix are now not uncommonly treated after the manner proposed by Huguier—viz., by excision; and this plan I have satisfactorily carried out in some few instances.

When the hypertrophy is very great this is the only satisfactory treatment; but before deciding on its necessity, the patient should be kept in bed for a week or two, in order that it may be ascertained how far the affection is reduced by this rest. It is the fact, as pointed out by Kiwisch, that rest materially reduces the bulk of the cervix under these circumstances. Rest and prolonged use of cold effusions would do still more. But when the disease is of long standing, and the uterine canal exceeding a total length of four inches, such palliative measures are inadequate. And the poorer classes, amongst whom the disorder is most marked, can ill afford the prolonged rest and attention requisite. Two plans of a palliative nature are open to us—(1) The use of pessaries, and (2) the closure of the vaginal orifice to such an extent as to prevent the escape of the cervix uteri, after a plan to be presently described. Each of these methods of treatment has peculiar advantages, according to the nature of the case. In many instances they prove sufficient; but in some few cases, as might be surmised, they are either inapplicable, or, in the long run, unsatisfactory.

The operation of Huguier is accomplished as follows: An incision is made behind the os uteri through the vaginal wall, of a semicircular form, and directed toward the centre of the cervix. Dissection is now made upward, in order to expose the hypertrophied cervix, and separate it from its connections posteriorly—great care being necessary to avoid the reflection of peritoneum there situated. A corresponding incision and dissection is made now in front; here, however, great care is necessary to avoid injuring the bladder. As much of the cervix having been exposed as is considered advisable, it is removed by the knife. Huguier at first em-

ployed the knife in removing the cervix, but subsequently the *écraseur*, finding the hæmorrhage troublesome when the knife is used. Such is an outline of the operation in question. The result is that a conical piece of tissue is removed, including the os uteri, the vaginal, and a portion of the supra-vaginal part of the cervix. In the original memoir before referred to, Huguier states that he had performed the operation in fourteen cases. In only one of such cases a fatal result—not due, however, to the operation—followed.

The operation is, judging from my own experience, a sound one, and in some instances offers the shortest road to the cure of the patient. The dissection and exposure of the cervix is the part attended with most difficulty, and it must be done with care. The bladder may extend to within half an inch of the os uteri, in which case it is evident that great caution must be required to avoid wounding it; again, the peritoneal reflection behind must be sedulously preserved intact. By keeping close to the cervical hard tissue these objects are secured. A sound in the bladder shows the position of that viscus, and acts as a good guide during the operation. For the dissection itself scissors should be used; the knife occasions troublesome bleeding. I believe that a deep dissection—beyond an inch and a half, or at most two inches—is rarely required; for if the hypertrophied and, usually, thickened cervix be excised to this extent, the rest, which necessarily follows the operation, will suffice to complete the cure. Retraction of the severed cervix must be guarded against by previously transfixing the uterus above that point. The edges of the mucous membrane may be brought over the stump, and the opposite side secured by sutures so as to cover it, after Dr. Sims's plan, if it be preferred.

Of the various forms of the *écraseur*, the steel wire-rope

FIG. 138.*



* Écraseur to be used with annealed steel wire. (Meyer & Meltzer.)

écraseur is more useful in amputating the cervix in such cases. In Messrs. Meyer & Meltzer's instrument (see Fig. 138) the wire and the slit fit accurately, and there is less liability to draw in extraneous tissues, while the power of the instrument is exceedingly great.

Prolapsus without Elongation of the Cervix.—These include the more ordinary cases of prolapsus. In dealing with this class of cases, the indications are almost always various; the treatment must have regard both to the primary cause and the secondary effects. (1) The condition of *the uterus itself*, and (2) the condition of *its supports*, have to be considered, and appropriate measures devised for rectifying defects and disorders.

1. *The Condition of the Uterus.*—In most cases of prolapsus the starting-point has been a defective or altered condition of the uterus, which would have proved perfectly and completely amenable to treatment. Apart from those special cases of hypertrophic elongation of the cervix which have been already dealt with, the condition of the uterus which most frequently calls for therapeutic measures in cases of prolapsus, is undue size and fulness of the organ, very frequently indeed associated with long-standing flexion and other troublesome alteration in its shape. The treatment required in cases where there is flexion, so far at least as the uterus itself is concerned, has been discussed under the head of Flexions, and it need not be here repeated. It must not be forgotten, however, that cases of prolapsus, really due primarily to flexion, cease to present that element in a recognizable form when the affection has lasted many years. All we see then is the extremely advanced prolapsus; the uterus itself is by that time otherwise changed.

Among the general measures always required in these cases, rest, very careful attention to the bowels so as to avoid necessity for straining, injections, and a careful dietary, are very important.

2. *The Condition of the Uterine Supports.*—The methods of treatment which have formerly been had recourse to for preventing or curing prolapsus were based on the one idea of keeping the tumor from escaping at the vaginal aperture. Bandages, external pads, boxwood or disk-shaped pessaries applied internally, were the principal measures of "supporting" the uterus and supplying defects of the natural supports. Next came improvements in the shape of opera-

tions for constricting the canal of the vagina, and thus restoring the lost support in a more natural manner. But there is yet room for improvement, and that improvement is only to be attained by a careful attention to the restoration not simply of the *outlet* of the vagina, but the position of the uterus in the pelvis. In other words, it is not sufficient to simply shut up the uterus in the vagina by means of a perineal operation, for most assuredly, if the uterus be in a chronic flexed state, it will continue to excite expulsive efforts, and the restored perineum will by and by give way. Even in single women who have never had children, and when the perineum has never been dilated or destroyed by a foetal head, very extreme degrees of prolapsus are sometimes witnessed.

Supposing the uterus to have been reduced by treatment to its proper size and shape, we have next to consider *how to maintain it in its proper place in the pelvis*. It must be quite obvious that unless this indication is complied with, the evil is likely to recur. It is in this direction that improvements in the treatment of prolapsus must be made. The cervical part of the uterus should occupy a position in the pelvis which is as nearly as possible its centre. The mechanism applied and the operations devised must have regard to this important circumstance.

Instead, therefore, of endeavoring simply to keep the uterus within the vagina, attempts should be made to maintain it in position at the top of this canal, which is its proper place. Admitting that this perfection of treatment is not possible in all cases, it is nevertheless practicable in most instances.

The principle of treatment which fulfils this indication is to render the vaginal canal rigid, thereby giving support to the lower part of the uterus, and to adopt such other measures as may maintain the vaginal canal in this rigid condition. In many cases this rigidity of the canal can be supplied by means of a pessary which, adapted to the requirements of the patient, becomes practically an artificial vaginal stem to the uterus; and in certain other cases, where the vaginal aperture has become too large to retain such an instrument, it must be constricted by operation.

Apply these principles to the consideration of actual cases. Cases of slight cystocele associated with ante flexion may be generally cured by the wearing of a well-adjusted "cradle" pessary as described in the treatment of ante-

flexion; but if the cystocele be of long standing, a constriction of the vaginal aperture by operation is necessary, the instrument being worn subsequently. An air-ball pessary is a palliative measure in some of these cases, where the cradle is inconvenient, or difficult to adjust, and where the perineal aperture is not much increased in size. In the case delineated in Fig. 131 no treatment short of a considerable narrowing of the vaginal aperture was sufficient, the prolapsed portion of bladder being hypertrophied and much thickened.

In cases where the prolapsus is dependent simply on retroflexion of the uterus without much laceration of the perineum, the Hodge pessary is a most admirable instrument when properly adjusted. It carries out the indications above alluded to, maintaining the vagina in its proper position, and, at the same time, and often quite efficiently, preventing the uterus from resuming its retroflexed position. Within certain limits it acts very well, but attention must be paid to the following points. As stated in the chapters on Flexions, if the flexion be of long standing the pessary alone may fail to cure it, other measures being requisite; but, once cured, the pessary will prevent its recurrence, and, moreover, it will, if there be sufficient perineal support below, prevent prolapsus occurring. The instrument must be adapted to the size of the vagina. A pessary made from a ring three inches or three and a quarter inches in diameter, having the shape shown at page 266, generally answers the purpose in such cases as those contemplated; it must sometimes be made broader below than above. The copper-wire india-rubber covered rings which I employ lend themselves admirably to the necessary process of fitting, for nothing can be a greater mistake than to suppose that one instrument will fit all cases. The instrument must be adjusted to the case, and, when properly fitted, may be worn for months without inconvenience. In some cases the watch-spring india-rubber covered round pessary answers very well; but only when the perineum has been properly repaired.

If there be rectocele, whether associated with retroflexion or not, the case generally requires an operation to restore the injured perineum. Subsequently, the uterus often requires to be sustained in its position by a pessary, as above directed for retroflexion. The rectocele may be slight in degree, the tumor small, but instruments are useless in

such cases, because the prolapsed bowel is so near the vaginal aperture. The discomfort attending these cases of rectocele is sometimes relieved by giving very small (teaspoonful) doses of castor-oil every morning.

We next come to those cases where the mass protruded is large, and where the vaginal aperture is very large, because it has been very much torn in labor. When the whole mass prolapsed does not exceed the size of a hen's egg, we may hope, under favorable circumstances, to satisfactorily treat the case, without an operation, by the use of instruments. Sometimes we are foiled even then, for what appears to be a tolerably good perineum may not give sufficient basis for maintaining a suitable pessary in its place. When the mass exceeds in bulk the size of an egg, a real cure is rarely obtained without an operation.

First of all we may speak of palliative measures, for even in the worst cases some patients reject operative measures, and in some the age of the patient or other circumstances put an operation on one side.

The mere *reduction of the tumor* is sometimes very difficult, when the parts have been some weeks prolapsed, and the neck thickened by inflammation. To effect reduction the urine should be removed by catheter, the patient placed in a favorable position, and the pedicle or neck of the tumor well covered with oil. Seizing the tumor between the two hands it is then gently compressed from side to side, and pressed upward, the attempt being made in such manner that the part *last* prolapsed shall be first reduced. Attempts made otherwise and by simply pushing the mass in an upward direction may altogether fail, but the plan above directed I have always found successful. Dr. McClintock suggested strapping the tumor in order to reduce its bulk. I have never found this necessary. The ulcerations or abrasions of surface seen in such cases readily heal when the tumor is reduced.

There are no doubt many cases in which the uterus is much hypertrophied and has become prolapsed with or without considerable increase in the size of the cervix, and which at first sight may seem difficult to treat without some operative procedure, but it will be found that by a continuous system of rest, irrigations of the uterus, use of astringents, etc., the bulk of the organ becomes greatly reduced, and the case loses its formidable characters. Dr. Emmet in the last edition of his valuable work tells an amusing

story, illustrative of this part of the subject. An eccentric but shrewd physician of the Currituck district, after having been shown Dr. Emmet's cases and practice in cases of prolapsus, told him he could cure any case in ten days. His practice was among the negroes. "His plan was to swing the woman in a sling from a beam, in the knee-and-chest position. This was maintained for ten days, during which time the vagina was kept filled with a strong decoction of oak bark, which was changed every day by means of a syringe. The sling was padded, the woman slept all the time, and was not disturbed except to receive her food or answer a call of nature." "The principles of the treatment were," Dr. Emmet states, "correct."

Internal Supports.—In a case where the uterus has been in a state of retroflexion a pessary must be adapted suited to the case. It generally happens that in the cases coming properly under consideration in this place an ovoid ring answers extremely well, but the Albert Smith type of Hodge pessary is necessary in many instances. The quite round, rather thickly covered watch-spring pessary answers well in some cases. In a few the disk-shaped ebonite pessary is found suitable; various sizes are required. In some cases I have found a rather large cradle pessary most serviceable, particularly in cases where the uterus has been previously in a state of anteversion. The use of these supports is, in bad cases, not generally satisfactory, unless the perineum has been effectually restored by operation.

Various forms of air pessaries, globular as well as disk-shaped, are kept by the instrument makers, but they are not satisfactory for prolonged treatment, while open of course to objections already mentioned.

Zwank's pessary has been in rather general use. It is an unscientific instrument, inasmuch as it distends the vagina very greatly from side to side, and perpetuates the prolapsus by dragging the uterus still lower toward the vulva; the only merit it possesses is, that it prevents the escape of the mass from the vulva.

External Supports.—Under this head are included mechanical contrivances for preventing prolapsus, having their fixed point from without. The perineal pad and bandage consists of an elastic, or non-elastic, abdominal belt, which is the fixed point, and a perineal pad, which is of a flattened egg shape, and is so adjusted by a strap fixed anteriorly and posteriorly to the abdominal bandage as to press upon

the edge of the perineum. The pad is sometimes made elastic by means of an india-rubber air-ball. This apparatus supplies in some degree the deficiency of the perineum, and prevents in some cases of prolapsus the expulsion of the mass outside the vulva. Here of course its function ceases. In some cases straps passed over the shoulders are the fixed points, being used instead of, or as an assistance to, the abdominal bandage.

Another principle of treatment consists in the use of a rigid stem of metal or other material, which, terminating above in the form of a small ball, or cup-shaped, is maintained in the vagina by means of a perineal strap, attached to an abdominal bandage. External frameworks of metal fixed anteriorly to the abdominal bandage, or to a kind of hernia belt, may be made the basis of support to such intra-vaginal stems. It is obvious that from without it is possible in this manner to adjust an internal support very firmly. The inconvenience attached to the wearing of such external solid mechanical supports is a great objection to them, but if external supports are to be made really efficient, some such principle of construction as this is required. Obviously, the alternative is the performance of an operation which will radically cure.

Radical Operations.—The success with which the very worst forms of prolapsus can now be treated by operation will render this method more and more popular, especially if after such operations care be taken to deal with the uterus, and promote its restoration to shape and position in the pelvis. The principle of the operation is to *constrict the vaginal canal*. Dr. Marshall Hall seems to have been the first to suggest it, and Mr. Heming the first to have practiced it. The part of the vaginal canal so dealt with was at first the lower aperture or entrance of the vagina, and this operation received later on important developments at the hands of Mr. Baker Brown, Dr. Savage, and others. A further step consists in the constriction of the vaginal canal higher up *as well as* at the vaginal aperture.

With respect to the merits of these various operations, much will depend on the case itself. A simple perineal operation is sometimes quite sufficient when the vagina has not been much distended, but when the protruded mass is considerable the vagina is necessarily much stretched, and simply to close the aperture of the vagina is attended with no permanent benefit. Many cases require a sort of com-

bined operation, a restoration of the perineum and a narrowing of the canal itself for some little distance upward.

The *Perineal Operation*.—It may be well in this place to consider the treatment of ruptured perineum in its entirety, including recent as well as chronic cases.

When the perineum is torn in the process of labor, the rent extends to a variable depth backward, sometimes destroying the whole sphincter of the rectum, in other cases not affecting the sphincter at all, but subtracting little or much from the perineum. If the rent looked at immediately after the labor is over exceeds an inch in depth, it may be said to be a case for operation. By "immediately" is meant in this place a few minutes after the birth of the child, at the time the parts are customarily inspected. Some days later a rent one inch in depth originally will have become diminished—even in cases when no union has occurred—very materially. And what has appeared a rather large rent perhaps is then found to be comparatively trifling. When the rent is at all considerable, however, the operation is required.

The *primary operation* should be performed within one hour from the birth, while the surfaces are still raw and bleeding. The surfaces are generally very well secured in apposition by rather deeply applied silver-wire sutures: two or more may be required. I have found them most easily introduced by means of a needle two and a half inches long, and bent into a completely semicircular shape. Such a needle can be employed with the patient lying on her side in the ordinary obstetric position. The sutures should go to the bottom of the wound, and they should come out on the surface some way from the edges. So performed, the operation is very simple. The nurse carefully and frequently dries the parts with soft lint, not using water, the knees are tied together, the catheter is employed, the bowels not allowed to act for at least three days, and on the fourth or fifth day the sutures can be removed. The result is generally very satisfactory. It is quite true that by rest and position union will sometimes occur without use of sutures, but this result cannot be depended upon, and the primary operation is so little troublesome or painful to the patient, that unless the rent is very slight, it is best so to perform it. It is of very little use inserting sutures when the labor has been over some hours; union rarely then occurs.

The *secondary operation* (A) should not be performed until

at least one month after the labor. Careful inspection of the parts is required to determine on the line of procedure. Good health, avoidance of erysipelalous influences, a dry, well-ventilated room, are essentials to success. The bowels should be previously carefully evacuated. Dr. Thomas very properly insists on the necessity for use of aperient medicine for some days previous to the operation, in order to dislodge any possible accumulations, but it is best, I consider, to use injections and not medicine during the two days preceding the operation. In long-standing cases of prolapsus, complete rest in bed for some days is quite requisite, and all ulcerative processes should have ceased. The

FIG. 139.*



FIG. 140.



hairs near the part to be operated on are first removed by a razor, the patient having been placed in the lithotomy position at the edge of the table. A semilunar incision is first made corresponding to the edge of the perineum, and indicating the outer edge of the surfaces to be bared. A corresponding internal semilunar incision is next made within, as shown in the annexed figure (Fig. 139); and the internal and external lines of incision connected by two horizontal cuts. The strip of mucous membrane enclosed is then removed by the scalpel or scissors. Some operators prefer the scissors, as the bleeding is less. The extent of this surface so removed varies in different cases. It should

* Fig. 139 shows the shape of the raw surface in ordinary cases. The dotted lines indicate the position of the hidden deep wire sutures.

always be deeper in the middle line (the floor of the vagina) than at the two extremities of the horns of the crescent; from one inch to an inch and a half in width is required in the middle line. The opposite sides, thus rendered raw, are next brought together by deeply inserted sutures. The quill suture, or modifications of it, were formerly employed. I have used for some time past beads made of ebonite, and of such a form as to allow of the wire used being easily attached to them (see Fig. 140). They are little balls with a projecting neck, and perforated through the middle. They possess the great advantage of permitting any easy regulation of the tightness of the suture, and allow of a better circulation in the soft tissues implicated. The quill suture is apt to give rise to great swelling and even sloughing of the new perineum; but I have never seen this happen with the bead suture. The deep sutures, two or three in number, are inserted at a distance of about three quarters of an inch from the edge, and the needle carrying the suture should so pass *as not to be visible until it emerges on the skin on the opposite side*. One of the sutures at least should pass as deeply as this. When the deep sutures are inserted, they should be temporarily tightened in order that it may be ascertained by the touch internally that the internal edges are really in apposition, otherwise gaping results, and union will not occur. Failing this, the deeper ones must be re-inserted. The finger should be inserted in the rectum in order to be sure that the suture does not enter this canal. Rather stout silver wire is, I consider, preferable, and the needle used must be a perforated one, having a nearly semicircular large sweep, and a large firm handle. It is rather more difficult to pass such a needle through, but the purchase thus obtained is more perfect. The ends of the wire are readily secured to the perforated beads. When the deep sutures have been fixed, two or three superficial ones are generally requisite, for which a smaller wire serves best. The knees are then tied together, and the patient removed to bed. In my opinion the best after-treatment of the wound is to use no water, but simply a piece of dry lint for the purpose of drying the surface, which latter should be done frequently. Position on the side, but the side may be changed from time to time. The deep sutures to be loosened or removed at the end of three days, the superficial ones rather later. As regards the material for the sutures, silk or catgut are preferred by some

operators to silver wire. Dr. Granville Bantock prefers silkworm gut, and he employs no beads or other appliances externally, simply knotting the sutures in the middle line. Dr. Chambers uses wire, fastening the wire in the middle line by means of Aveling's coil and shot.

It was formerly the practice to give opium for some days, to prevent action of the bowels, but some operators—Dr. Bantock for instance—prefer to evacuate the rectum after two days by means of an injection of olive oil. This should be carefully injected by means of a small tube, or mischief may be done. If the operation is simply a restoration of the perineum, without involving the rectal sphincter, the difficulty of procuring an evacuation without interference with the reparative process is much less considerable. The use of the catheter for the first three days was considered essential, but it is now frequently dispensed with.

The *combined operation* (B), consisting of constriction of the vaginal canal as well as its lower aperture, I have practiced in the following manner: One plan is to remove a triangular strip of mucous membrane about two inches broad below, and about half an inch broad above, from the floor of the vagina, the upper end or apex of the triangle being quite close to the os uteri. The ordinary operation (A) is then performed as described above. The shape of the surface thus bared is shown in the annexed drawing (Fig. 141). Another plan is to remove *two* triangular strips from the vaginal canal, one on each side of the floor of the vagina, the operation (A) being superadded. When the edges of these triangular bared spots are brought together, the vagina is of course proportionately constricted. The method which I have pursued of maintaining the edges in apposition is to use a stout piece of silver wire. By means of a short curved needle, such as is used in vesico-vaginal fistula cases, the stitch used after *post-mortem* examinations is employed to bring the edges together, beginning from above. As the wire is drawn through it is straightened, and finally constitutes a kind of splint. In Fig. 141 the arrangement of the suture is shown before the wire is pulled straight. The upper end of the wire, which is close to the os uteri, is turned downward to prevent its scratching, and cut off short; the lower end projects at the perineum, and is twisted round one of the beads when the operation is completed. This splint-stitch, as it may be termed, answers very well; healing generally occurs, and the wire, having done its

work, comes away in four or five days without trouble or necessity for stretching the perineal wound. If two triangular strips are removed, the same procedure is adopted with each of them. This combined operation at once restores the perineum and removes the superabundant and hypertrophied vaginal walls.* The two operations may be readily performed at one and the same time.

Dr. Savage describes a method of operating which substantially much resembles the above. He extends the

FIG. 141.



perineal operation by removing the mucous membrane upward along the floor of the vagina, but he relies on deep sutures for producing coaptation. Such coaptation along this internal line can only be produced by the deep sutures at the cost of shortening the vagina altogether. Such shortening, inasmuch as it implies descent of the uterus, I consider objectionable, and therefore the use of separate sutures for the vaginal floor are to be preferred. I have

* This method of constricting the vagina was first described by me in the *Lancet*, June 5, 1869.

performed the above combined operation in several cases, and find it a satisfactory one, and I know that it has been performed and found satisfactory by others. The plan of extending denudation along the floor of the vagina in form of a triangle, as in the above operation, has been also practiced by the late Professor Simon and others under the term "posterior colporrhaphy;" the edges being, however, approximated by ordinary stitches.

Another method of narrowing the vagina in the same part is that of Bischoff of Basle, described by H. Banga*

FIG. 142.



of Chicago, the effect of which is that the lower part of the vagina is not only narrowed, but, owing to the elongation of the perineum, its axis is brought forward. A tongue-shaped flap is separated in the direction upward, and each edge of it is united by sutures to the posterior edge of the ordinary lateral denudation. The procedure is very ingenious. Banga states that since 1875 forty such operations have been performed by Bischoff, Engli, and Banga, with only one death, and that when amputation of the cervix was also performed.

* *Amer. Journ. of Obst.*, vol. xi., p. 247.

Operation for constricting the Upper Part of the Vagina.—Dr. Marion Sims* describes this operation as follows: The operation consists in removing a V-shaped piece of the mucous membrane forming the roof of the vagina, and therefore covering the bladder. The apex of the V is near the urethra, and the two arms reach to the side of the cervix uteri. Finally, the shape of the excised surface is that represented in Fig. 142. The opposite denuded surfaces are next brought together by means of sutures, *a* to *b*, *c* to

FIG. 143.

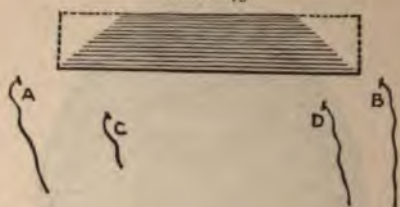


FIG. 144.



FIG. 145.



d. The effect is, that the vagina has its canal much contracted; a little pouch is left opening at *e* (into which the uterine cervix might slip if the opening be left too large, as in cases reported by Dr. Emmet) for escape of the secretions of the part. Dr. Sims advises that, subsequently to the operation, the patient be kept in bed, or in the recumbent position, for two or three weeks, the bowels to be confined for a week, the catheter to be used. The lower sutures are removed in eight or ten days, the upper ones in a fortnight. The principle of Dr. Sims's operation is to

* *Op. cit.*, p. 310.

constrict the vagina superiorly, and the constriction is effected by removing part of the roof of the vagina.

Perineal Rupture with Destruction of the Rectal Sphincter.—In cases where the sphincter ani is entirely destroyed the difficulty in restoring the integrity of the parts is very great. Dr. Emmet in 1873 published the results of his experience as to the best method of dealing with such cases.* He points out that the fibres of the severed muscle are in a state of retraction, those which formed the inner surface of the circle being more retracted than the others; the result being that a convex surface is presented at the floor of the rent. It is necessary to denude the surface on each side farther back than at first sight seems necessary. The diagram (Fig. 143) shows the retraction of the fibres after rupture. The suture A B will, Emmet points out, only imperfectly bring the parts together; Fig. 144 shows the action of the suture. It is necessary to introduce a suture at a lower level, as at C D; and the action of this suture is shown in Fig. 145. The suture C D is first secured, the bowels are relieved on the sixth day by castor-oil, the sutures being removed the day after. Dr. Emmet has exhibited great ingenuity in detecting and in surmounting what had before seemed a great difficulty, and any one who has attempted the operation will appreciate the truth of this.

Mr. Lawson Tait practices an operation for the cure of severe perineal rupture coupled with laceration of the sphincter.† He denudes the surfaces in a peculiar way by cutting into the tissues along the line of the laceration to a certain depth, and then opening out the raw surfaces thus produced and bringing those of the two opposite sides together by sutures, which are so introduced as to bring the deep angles of the incisions into approximation. The innermost of the sutures are in the vagina, the outermost are on the perineal surface.

* Latest particulars in his 2d edit., 1880, p. 402.

† "Obst. Trans.," vol. xxi., p. 292.

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THE
PATHOLOGY, DIAGNOSIS, AND TREATMENT
OF THE
DISEASES OF WOMEN.

CHAPTER XXXII.

AMENORRHŒA.

DIAGNOSIS of Nature of AMENORRHŒA.—(a) Cases in which Menstruation is not, and never has been present—The various Causes of this Condition; Defective Formation or Absence of the Organs concerned; Retardation of Puberty; Absence of Secretion; Retention; Pregnancy—Diagnosis of these one from the other. (b) Imperfect Establishment of Menstruation. (c) Cessation or Suppression of Menstruation—Causes of this Condition: Pregnancy, Suppression, Retention, Premature Cessation of Catamenia.

TREATMENT OF AMENORRHŒA.—Treatment for Delay of Puberty or Defective Development—Treatment for Disorder of General Health with Amenorrhœa—Emmenagogues, etc.—Chlorosis and Amenorrhœa—Vicarious Menstruation—Treatment of SUPPRESSION—Acute Form—Means to be Adopted—Emmenagogues; Mechanical Stimulation of Uterus—Treatment of Menstrual RETENTION—Cases of Absence of Vagina—Cases of Imperforate Hymen—Cases of Imperforate Os Uteri.

Under the term "amenorrhœa" will be considered those cases in which menstruation is either absent altogether, or in which the quantity of discharge is less than it should be. The term is a very vague one, and simply defines the presence of a condition which may be symptomatic of many widely differing disorders or physiological changes in the generative organs.

The series of cases which may be first examined are those in which

(a) MENSTRUATION IS NOT, AND NEVER HAS BEEN, PRESENT.

The first point which it is necessary to determine, in endeavoring to ascertain the cause of the non-appearance of the menstrual secretion, is: Are the organs essential to the performance of this function actually present? In cases of *congenital absence of the ovaries* no menstrual discharge is likely to take place; and the same holds good if, the ovaries being present, the *uterus* be absent. Cases coming under either of these categories are rare. In cases of absence of the ovaries the external signs of puberty are wanting: the breasts, under such circumstances, would be small and undeveloped, and absence of sexual desire and of other feminine characteristics, might be expected to be observed. *Absence of the uterus*, or what practically amounts to the same thing—extremely rudimentary formation of this organ—is less rare than absence of the ovaries. No absolutely distinctive signs of the absence of the uterus can be given: a careful examination only is the means of determining the diagnosis. From the facts which have come before me I infer that there is no absolute relation between the outward and the internal conformation. That is to say, the external generative organs may be normal, while the internal ones (*e.g.*, the uterus) may be very small and imperfectly developed.*

Absence of any one of the parts of the generative apparatus just referred to—of the ovaries, uterus, or vagina—is rare; but it is not so uncommon to find that the uterus and ovaries, although actually present, retain their infantile conditions; that degree of development necessary to the establishment of the catamenial function failing to take place. (See chapter on Malformations, etc., of the Uterus.) There may be no defective condition of the bodily health, and yet from month to month there is no appearance of the discharge. The "proper" age is gone by, and the friends of the patient become seriously uneasy. In a few cases of this kind the vagina is healthy, the uterus present; the only thing wanting, in fact, is the discharge, the cause being a slightly defective condition of the development of the

* The subject of the congenital defects, malformations, etc., of the uterus, has been elaborately treated by Kussmaul in his work "Von dem Mangel, der Verkümmernng und Verdopplung der Gebärmutter," etc., 8vo. Würzburg, 1859. In this work there will be found a very large number of illustrative cases.

uterus; this organ being found normally constituted, but retaining to too great a degree its infantile condition. Sir J. Y. Simpson called particular attention to the connection of this condition with "amenorrhœa."* The signs of ovarian activity are either absent, or present only in a very slight degree. These cases give no occasion for anxiety as regards the immediate effect on the patient; but the prognosis may be serious as regards her matrimonial prospects. It is, in a word, uncertain what course will be taken with the generative organs—whether they will remain in this functionally idle condition, or not; and, if not, when and how the appearance of the secretion will take place.

For the purpose of ascertaining, firstly, whether the vagina and uterus be actually present, and secondly, if so, whether they present or not that imperfect degree of development alluded to, it will be necessary to make an examination of both external and internal generative organs.

It will be important to determine the question, *Is puberty retarded?* With reference to the arrival of puberty, we have first to look for the *outward* evidence of the same in the form, development, etc., of the body generally, and of the external sexual organs in particular; we have to seek for *internal* evidence of the functional activity of the reproductive organs, in the symptoms or signs described under the term "menstrual molimen" (see Phenomena of Menstruation). It must not be forgotten that the menstrual molimen does not indicate anything more than that the ovaries are present. The uterus may be so defectively formed that menstruation is not possible, although the ovaries are, so far as circumstances admit, exercising their normal function.

If the patient exhibit other characteristic evidences of having arrived at puberty, and no menstrual discharge has been observed,

Either (1) *There is no secretion of the menstrual fluid;*

Or (2) *The menstrual fluid is secreted but not evacuated—retention;*

Or (3) *The woman is pregnant.*

Pregnancy.—It is possible for a woman to become pregnant in whom no catamenial discharge has ever been observed, as several well-authenticated cases prove.†

* *Med. Times and Gazette*, 1861.

† Montgomery, *op. cit.*, p. 77.

In cases of *retention of the catamenia*, the ovaries and the uterus discharge their functions regularly, but there is no outlet for the secreted fluid. The uterus becomes enlarged, an abdominal tumor is felt, and the woman is often, under these circumstances, supposed to be pregnant. The ordinary history of such a case is as follows: Puberty arrives, and with it the indications of activity on the part of the generative organs, and recurrences of the menstrual molimina are observed from month to month. The pain and discomfort at these periods are at first inconsiderable, but after a time these symptoms increase in intensity; a sense of fulness and weight in the pelvis remains also in the intervals between the menstrual attempts. The symptoms become gradually more severe in character, the patient is never thoroughly easy and comfortable. The bowels are constipated; there are frequency of micturition, permanent and severe pains in the loins, all periodically increased in severity. The health fails, and the patient passes from a condition of perhaps robust health to the opposite extreme; the appetite is lost, and nutrition greatly interfered with. And now the uterus, increasing in size from the presence of the retained catamenial secretion, forms a tumor readily detected in the hypogastric region: in some cases both vagina and uterus are distended by the retained secretion. The patient is sometimes considered to be pregnant, and the supposition that pregnancy exists is apparently perhaps confirmed by the presence of those gastric symptoms usually associated with pregnancy, such as vomiting and nausea. The breasts may also sympathize, and become painful and tumefied. The intensity of the symptoms observed varies much in different cases; and the degree to which the uterus becomes distended is open likewise to great variation; it would appear that in some instances a portion of the menstrual secretion is from time to time absorbed, and a large accumulation thus prevented. When the distension of the uterus reaches a certain point, pains in the back, resembling labor pains, and doubtless due to contractions of the uterus, are observed.

The diagnosis is arrived at by a consideration of the symptoms and by physical examination. The characteristic points, so far as the symptoms go, are—the presence of puberty; generally complete absence of menstrual discharge; presence of periodic attacks gradually increasing in severity, of the kind already described; a fulness in the pelvic region,

which goes on increasing from month to month, and which gives rise to difficulties in micturition and defæcation; all these symptoms, be it observed, occurring soon (within the first year or so) after puberty has arrived. If the woman be married it will, in the large majority of cases, but not in all, be found that sexual intercourse is performed with difficulty, or that it cannot be performed at all. The physical signs are—presence of a tumor in the hypogastric region, discoverable by examination of the abdomen; and the want of an outlet for the menstrual fluid, discoverable by an examination of the vagina; the existence of atresia of this canal, imperforate hymen, or closure of the canal of the cervix uteri. The rare case of absence of the uterus, the ovaries being well developed and in activity, is to be distinguished from retention by the fact that the menstrual molimina, though present, are imperfectly marked and wanting in intensity; in addition to which, a simultaneous examination through the bladder and rectum would fail to detect the uterus in its normal position. Practically this latter question is hardly likely to arise.

The only other condition to be eliminated from the consideration is non-secretion of the catamenial fluid. Here the menstrual molimen (possibly) and puberty are present, but no discharge appears. If there be an absence of all signs of accumulation in the uterus, of symptoms of fulness and pressure, and of the physical signs before referred to as observable when the case is one of retention, these are indications that the case is not one of the latter description. The examination *per vaginam* detects no atresia of this canal, and sexual intercourse is not impeded. It is not sufficient to determine that the vaginal canal is free; for although the retention is mostly due to obstruction in this situation, the obstruction may be situated in the cervical canal of the uterus itself. The latter condition existing in connection with retention is, however, very rare. The causes of non-secretion will be considered presently.

(b) IMPERFECT ESTABLISHMENT OF MENSTRUATION.

There is a class of cases also very frequently presenting in practice in which a discharge has occurred on one or more occasions, but very slight in amount, and only enough to show that menstruation is possible.

It is in connection with these cases of imperfect estab-

lishment of menstruation that a light-colored discharge appears—replacing in a manner the catamenial flow—at intervals. This spurious form of menstruation may occur, for two or three or more periods before the normal flow occurs, even in cases when there is nothing evidently abnormal present. It is in such cases also that the so-called vicarious menstruation may occur; and the diagnosis is especially interesting, not less from the frequency with which they occur in practice than from their actual importance.

(c) SUPPRESSION OR CESSATION OF MENSTRUATION.

There are several conditions capable of producing a cessation of menstruation, and the function may be suddenly and completely put an end to, never to appear again, or the cessation may occur more gradually, but still before the proper age for its termination has been reached. And, again, menstruation may be temporarily arrested, returning after some months' cessation. Again, there are many cases in which menstruation is not exactly arrested, but in which the discharge is exceedingly scanty, and wanting in the ordinary physical qualities of healthy menstruation.

Before discussing the varieties of amenorrhœa of a pathological character it will be necessary to describe that physiological suppression of menstruation due to pregnancy.

Suppression of Menstruation due to Pregnancy.—"We are," says Dr. Montgomery, "quite justified in adopting, as a general rule, that in healthy women, whose menstruation has been established and continued regular, and who are not nursing, conception is followed by a suppression of the menstrual discharge at the next return of its period; but then this suppression may not so occur; and, on the other hand, it may happen from a variety of other causes altogether unconnected with pregnancy."

The statements of the patient must be received with caution. "Nothing," says Casper,* "is easier for a person who is desirous of simulating pregnancy than to declare that menstruation has ceased for such and such a time; and it is only by a favorable accident that an examination is made

* "Practisches Handb. der gerichtlich Medicin. Biolog. Th." Berlin, 1858, p. 201.

at the catamenial period, and the imposition thus discovered." In like manner, menstruation is now and then simulated, in order to avert the suspicion of pregnancy, and artificial staining of the linen with blood has even been had recourse to, in order to carry out the deception. The actual value of menstrual suppression as a sign of pregnancy amounts to very little. Suppression of the catamenia for three or four months not unfrequently occurs from causes altogether independent of pregnancy. In young women only just arrived at puberty, the interval is now and then as long as this before the function is thoroughly and completely established; and it is not very uncommon for the menses to be suppressed just after marriage, for a month or two, without pregnancy taking place.

If pregnancy have existed for more than four months, other data for diagnosis—enlargement of the uterus, mammary changes, etc., are available, and should be sought for. In women who have an object in concealing the fact of the existence of pregnancy, the absence of the catamenia for two or three periods is, however, to be regarded as a suspicious circumstance, and should be sufficient to put the practitioner on his guard, although it need hardly be observed that this suspicion should be confined to himself at this stage of the inquiry. The presence of "morning sickness," associated with catamenial suppression, would make the suspicion of pregnancy a little stronger; but some pregnant women are never "sick." As a rule, the suspicion of the existence of pregnancy may be dismissed if, after four or five months, the physical signs of pregnancy, such as enlargement of the uterus, etc., do not show themselves; but even this rule is one to which there are exceptions. It now and then happens that the catamenia are suppressed for two or three months, and the woman *then* becomes pregnant. In such a case the physical signs just alluded to would not, of course, present themselves at the end of the four or five months from the date of the suppression, and an erroneous inference might thus be drawn. In some rare recorded instances, women have been known to present the peculiarity of never conceiving until after three or four months' previous suppression. Again, pregnancy may occur at a somewhat advanced period of life, and when the menstrual phenomena have for some years altogether ceased. The absence of menstruation in a woman over forty years of age, for a period varying from two to nine

years, may be followed by pregnancy at the end of that time.*

More frequently, perhaps, the fact of the menses having ceased is made the basis of the conclusion that pregnancy exists by women who desire to be pregnant, and who, somewhat advanced in life and arrived at "a certain age," interpret facts according to their own wishes. Here embarrassment is not seldom produced; women at this age are ready with all those presumed corroborative facts with which their own experience or the experience of their friends has made them familiar; and it is only by a rigid adherence to the rule to take nothing which is simply asserted for granted, that the practitioner will prevent himself from being led to form equally sanguine expectations with the patient herself. At the time when the functions of reproduction are about to come to an end—the mere cessation of the menses is of less value as a sign of pregnancy than at any other period of life. It is the fact, that, at this period, a suppression for two or three months, the discharge then returning, often rather profusely, is not at all unusual.

The absence of the catamenia, then, must never be considered as a proof of pregnancy; but in many cases it is of infinite service in directing attention to the view of its possibility. Examination of the abdomen, the vagina, and the breasts, gives more decisive information; and on the data thus afforded only can anything like a positive opinion be given.

Presence of Menstruation during Pregnancy.—In a certain number of cases, even when the patient is pregnant, a discharge more or less resembling the menstrual discharge may occur from month to month. Elsässer† has collected nearly fifty cases, in which a discharge of this kind was noticed during pregnancy. Thus, in eight cases a discharge occurred once during pregnancy, in ten cases twice, in one twice or three times, in eleven cases three times, in four cases four times, in six cases five times, in five cases eight times, and in two cases nine times during pregnancy. And cases are related—one I have myself placed on record‡—

* See Montgomery, *op. cit.*, for several interesting cases of this kind, pp. 88 *et seq.*

† Quoted from Henke's "Zeitsch." Bd. 73, p. 402, by Casper, *op. cit.*, p. 202.

‡ *Lancet*, vol. ii. (1858), p. 91. See also a case, not, however, precisely of the same kind, recorded by me in vol. viii. p. 221, of the "Obst. Trans."

in which patients habitually menstruate only when pregnant. [Dr. J. Marion Sims has seen a case in which menstruation continued regularly and normally up to the eighth month of pregnancy.]

Extra-uterine Pregnancy.—There are many circumstances which may give rise to a discharge from the uterus during pregnancy, such as cancer, inflammatory or congested conditions of the os, etc. An important class of cases, however, is that in which there is an occasional sanguineous discharge from the uterus, which may or may not simulate menstruation, in women the subject of *extra-uterine* pregnancy. A rather common symptom in cases of extra-uterine pregnancy is sanguineous discharge occasionally occurring during the two or three months immediately subsequent to the date of the supposed impregnation. Thus a woman six weeks after the date in question has a hæmorrhage. This may be due to abortion, to retardation of menstruation, or to extra-uterine pregnancy. The points to which attention should be directed, if extra-uterine pregnancy be suspected, are the following: Unusual pain at a particular situation in the pelvis; detection, by bi-manual examination, of a tumefaction corresponding with the seat of the pain—an increasing enlargement. If the patient continue to present signs of pregnancy, while hæmorrhage recurs occasionally, this conjunction of signs is to a certain extent confirmatory of the suspicion. And supposing the patient to be suddenly seized, at the end of two or three or four months, with symptoms of internal hæmorrhage (see Pain referable to Generative Organs), a history such as that indicated, together with the symptoms of internal hæmorrhage, point to the conclusion that the case is one of extra-uterine pregnancy and rupture of the cyst, or of some vessel in its neighborhood. In a remarkable case of extra-uterine (tubal) gestation, related by Mr. Cheesman,* the patient went beyond the full term, never even suspecting her pregnant condition, and deceived by the appearance of what she considered to be a menstrual discharge. There was a discharge from the vagina every five or six weeks, chiefly in clots. The case is the more remarkable that the patient had previously had four children.

Lastly it must be stated that cases in which menstruation, or, at all events, a discharge resembling it, is present

* *Lancet*, Sept. 14, 1861.

for two or more periods, *coincidentally with pregnancy*, the pregnancy ending quite naturally, are not quite so rare as is usually stated.

The diagnosis between suppression of the catamenia of a pathological nature and the kind of suppression just alluded to, in which there is a physiological reason for it, is occasionally difficult when the catamenial discharge has been absent only for two or three periods; for the pathological suppression is sometimes accompanied with some of the general symptoms of pregnancy, as morning sickness, swelling of the breasts, etc., when pregnancy is certainly not present. This form of suppression very closely simulating pregnancy is noticed by Denman and Montgomery as frequently occurring soon after marriage; and Montgomery characterizes such cases as always liable to great doubt, and extremely embarrassing to the practitioner. In an instance which came under my own observation, a like obscurity surrounded the case, but the patient had been married for several years. Under such circumstances the decision must be postponed, and a guarded opinion given.

Another case which is often a source of embarrassment is presented to our notice in young women in whom the catamenial function has only recently been set up; and here we may be in doubt whether the absence be due to suppression, to pregnancy, or to other causes which have been already considered. The absence of a known cause for suppression, the fact that the patient continues in good health, and the absence of signs of pregnancy, would lead to the inference that the case was one of retarded puberty (the age of the patient admitting of this hypothesis) rather than one of suppression in the sense of the word in which it is now used.

Delay in the Appearance of Menstruation (Amenorrhœa) from Constitutional Causes.—In this class of cases the uterus and other organs are well formed up to a certain point, but fail in undergoing that further degree of change or increase in size which is usually observed at the age of puberty—the advent of puberty, in other words, is retarded. This retardation of puberty is, in most cases, the result of disease, of which we very shortly find other evidences present, but in a few cases the puberty is retarded much beyond the usual time, the individual remaining apparently in perfect health. These two classes of cases are widely different, and their discrimination, which is of great importance, has been

already pointed out. Amenorrhœa from non-secretion of the menstrual fluid in women who have arrived at puberty, and in whom the sexual organs present no remarkable deviation from the normal state, is a symptom of very great interest, the cases included under this head being very numerous. It is very frequently the case that this form of amenorrhœa is connected with a defective condition of the general health. Of the *general conditions* which may be associated with this form of amenorrhœa *Chlorosis* is perhaps the most important. The signs of what is termed the "chlorotic" condition are the following: At the period when the external signs of puberty begin to manifest themselves, the patient usually experiences, at monthly intervals, some of the "*molimina menstruationis*" before referred to, but, coincidently, she falls into a general state of ill health. The strength fails, there is extreme lassitude, often great drowsiness and indisposition to exertion of all kinds; there is cephalalgia, often very intense in character; the whole digestive system is deranged; inappetency, or singularly depraved states of the appetite, nausea, obstinate constipation—these are almost constant symptoms. The skin assumes a remarkable and highly characteristic appearance, being, as the name *chlorosis* denotes, of a greenish-yellow color, more or less intense in degree in different cases; a ghostly kind of pallidity is often seen. The lower extremities may become œdematous, and the disturbance of the circulating apparatus is evinced both by this and by frequent palpitations, noises in the ears, and alterations of the sounds of the heart and of the great vessels detected by auscultation. The chlorosis and the amenorrhœa are to be regarded as both due to the disordered condition of the whole nutritive functions of the body, which is the primary etiological element. Chlorosis may be observed not only in cases where there has been no menstrual discharge of any kind, but also in individuals who have formerly menstruated slightly, but in whom the menstrual phenomena have ceased.

In a certain number of cases the *tuberculous diathesis* exerts an influence in preventing the establishment of menstruation. This phthisical tendency is itself an evidence of an extremely low state of the nutritive powers.

An attack of severe illness of any kind will delay or prevent the appearance of the menses. Dr. West mentions a case in point, in which a severe attack of scarlet fever at

the age of fifteen had had the effect of preventing menstruation up to the age of twenty.* *Cretinism* has a similar effect.

Imperfect Establishment of Menstruation.—Cases of this kind are not uncommon. The period of puberty arrives, and a slight menstrual discharge appears, then ceases, and reappears again slightly at the end of two months, more or less. Or the colored discharge is replaced by a pale fluid, tolerably regular in its monthly appearance. These are cases to which the term *amenorrhœa* is, strictly speaking, not applicable, but they really belong to the same category as those just considered, for as a rule the deficient menstruation is due to some disorder of the general health. A circumstance sometimes observed in cases where menstruation does not take place is the occurrence of what is termed *vicarious menstruation*—a periodic sanguineous discharge from some other part of the body, one of the mucous surfaces, or the surface of an ulcer.

Suppression of Menstruation.—Menstruation may be arrested at any period of its occurrence by the operation of certain external or internal causes, the stoppage occurring abruptly, or more slowly and gradually. We have thus two distinct types of cases.

α. Sudden Form.—Here the circumstances indicate the operation of a disturbing element: the menstrual period having arrived, the discharge has continued for some hours and has then suddenly ceased, there being an apparent connection between the cessation in question and some external or internal disturbing influence known to have been in operation at that particular juncture. Thus the menstrual flow may be suddenly suppressed by the feet getting wet or by a chill received in any other way, by fright or by the reception of distressing or exciting news. Dr. Emmet quotes three cases of suppression due to mental shock (2d ed. page 175). These are the most common causes of the kind of suppression here alluded to. Sexual intercourse has been known to produce the same result. The first symptom of the presence of one of the exanthematous diseases may be the sudden stoppage of the catamenial discharge.

Another variety of this form of suppression is that in which there is no cessation of the discharge of the marked character just described; the discharge continues the regular

* "Lectures on Diseases of Women," p. 34.

number of days, but fails to recur at the expected time. This form of suppression, as also that which may be called "suspension" of the discharge, may occur from a variety of causes. The catamenial function is frequently suspended, according to Sir Ranald Martin, in ladies on the voyage from India by the Cape. Dr. Tyler Smith states that these effects of a marine atmosphere extend in some habits to a residence by the sea-side. He mentions an instance in point, in which a lady who went to reside at one of the islands on the western coast of Scotland, together with her sister and their two maids, all became amenorrhœal.* Change of elevation from the Thames Valley to 500 feet above that level I have observed to occasion amenorrhœa in three separate individuals. Montgomery notices the effect of mental depression in producing this suspension in the case of young girls confined in prison. I have had occasion more than once to observe that women are liable to have the menstrual discharge suspended for one or two periods after first going to reside in a house the staircases of which are of stone and uncarpeted, their previous residence having had a wooden staircase only.

β. Gradual Suppression.—Under this head may be considered those cases in which the discharge having diminished in amount for two, three, or more periods, or the interval having become longer and longer, it has finally ceased.

The causes of gradual suppression of the menses may be conveniently classed under three heads—constitutional, organic, and physiological.

Constitutional.—Any circumstance, or chain of circumstances, calculated to interfere with the nutrition of the body generally and the due performance of the various functions which constitute life, may give rise to suppression of the menstrual secretion. It frequently happens that, at the time when the vital processes are in a state of great activity—when the girl is changing into the woman, and it is more than ever necessary that the body should be duly exercised, well nourished, exposed to the fresh air, and recruited by sufficient rest—these conditions, so necessary to due development and healthy growth, are wanting. Young women belonging to the lower and middle classes of society, and who are engaged for many hours daily in sedentary oc-

* "On Leucorrhœa," p. 182.

cupations of various kinds, needlewomen especially, often suffer in this way. The health gradually fails, and after a time menstruation ceases. Then, and not till then, in the majority of cases, advice is sought. Suppression not seldom takes place in a more acute manner in young women so engaged; a slight cause, and one which in a robust individual would be inadequate, being now sufficient to determine it.

When this gradual suppression is observed it behoves us carefully to scrutinize the bodily condition of the patient generally. The suppression is an important symptom, not in itself, but as indicative of some, perhaps deeply seated, morbid change, the early detection of which may be of the greatest service to the patient, if a right use be made of the knowledge thus acquired. The more common of the general constitutional conditions leading to the suppression now under consideration are—*long-continued anxiety of mind, plethora, chlorosis, anæmia, severe hæmorrhages, or long-continued discharges from the various mucous surfaces, deposition of tubercle in the lungs or other organs.*

Premature termination of the catamenia, which may be considered as a form of amenorrhœa, may be caused by chronic uterine disease, by severe and repeated hæmorrhages, etc., or it may occur without any assignable reason. In the case of a woman more than thirty years of age, the amenorrhœa may turn out to be permanent, although of course this could not be known at first.

Of the *local causes* of gradual suppression, the following are the chief: *Flexions of the uterus* frequently completely arrest menstruation, the discharge, less and less each year, finally ceases long before the proper time; and although in the majority of cases flexions tend rather to produce menorrhagia than amenorrhœa, cases of amenorrhœa are sufficiently common in connection with them. The discharge becomes scanty, and may finally cease altogether. Anteflexions, as well as retroflexions, may produce the result in question. *Disease of the ovaries* is often attended from the first with amenorrhœa, but not always. When one ovary alone is affected, the menstrual functions may go on apparently as usual. *Chronic peritonitis*, resulting in the formation of constricting bands over the ovaries—a condition to the frequent occurrence of which Dr. Tilt has, in this country particularly, called attention—may give rise to amenorrhœa of this kind. *Chronic hypertrophy* of the

uterus is sometimes associated with amenorrhœa. *Fibrous tumor* of this organ also now and then produces amenorrhœa. Absence of menstrual discharge is sometimes noticed previous to the occurrence of *peri-uterine hæmatocèle*. *Stricture of the cervical canal of the uterus* occurring after pregnancy, or produced by the repeated application of caustics to the os uteri, is occasionally met with as the cause of this form of amenorrhœa.

TREATMENT OF AMENORRHŒA ARISING FROM DELAY OF PUBERTY OR IMPERFECT DEVELOPMENT OF THE GENERATIVE ORGANS.

In cases where the arrival of puberty is simply delayed, if the patient be apparently strong and healthy, and if there be no appearance of menstrual molimina, no interference is necessary, at first at all events; and under these circumstances the result is usually satisfactory. The bodily rather than the mental faculties should be called into exercise, and every means taken to nourish and invigorate the system.

Absence of menstruation, together with absence of menstrual molimina, is hardly ever noticed after the age of nineteen or twenty, unless dependent on defective development of some part of the generative apparatus. In the chapter on Uterine Malformations, etc., will be found cases illustrative of this condition. In cases of defective development of the uterus or other of the generative organs, the patient may be otherwise in perfect health. Those cases are the least encouraging in which the menstrual molimina are entirely absent. Where the absence of menstruation is connected with the presence of an undersized uterus—the “infantile” uterus—Sir J. Y. Simpson recommended the continued wearing of a series of small galvanic pessaries of greater and greater length and thickness, a practice which has been since adopted with occasional success.

It need hardly be stated that cases requiring this method of treatment are very exceptional indeed. The circumstances which might justify or necessitate its adoption would be those in which general invigorating measures have been fruitlessly tried for a considerable period (which period would vary according to the age of the patient), a very complete diagnosis made as to the state of the uterus,

and the condition of the health of the individual being such as conclusively to show that the absence of menstruation is not dependent on any defect therein. The employment of Faradization promises good results under such circumstances. In a well-marked instance of infantile uterus in a girl *æt.* 20 who had never menstruated, this agent was used under my direction in University College Hospital for some weeks. The action of the current had the effect latterly of inducing a copious leucorrhœal discharge. The patient became vastly improved by the treatment adopted, and left the hospital for benefit of change of air; but of the final issue of the case I have no information.

The prospect of a good result from such internal treatment of the uterus is infinitely small, unless the uterus be of a tolerable size. For instance, if the uterus be half an inch too short, and the patient has arrived at the age of twenty, little benefit of any kind could be expected. The double examination described at p. 60 should be always instituted in such cases: care is required to distinguish between a flexed uterus and one which is too short. Further, it must be recollected that the imperfectly developed uterus has naturally a greater degree of ante flexion than in the normal state.

In some cases, where the general health appears to be good but no menstruation occurs, marriage is efficacious in inducing the appearance of the menstrual flow. Marriage should not, however, be recommended with the view of curing amenorrhœa, unless means have been taken to ascertain that the vagina and uterus are well, or reasonably well, developed.

TREATMENT OF AMENORRHŒA ASSOCIATED WITH DISORDER OF THE GENERAL HEALTH.

A large number of such cases come before us: the discharge has appeared once or twice, slight in quantity, and has then ceased; the subjects of these symptoms being usually young women between the ages of twelve and eighteen, suffering from general indisposition of some sort, with which the amenorrhœa is associated. In a smaller number of instances there has been no attempt at menstruation, the patients having fallen into a state of ill health before arriving at the menstrual age.

The relation, as cause and effect, subsisting between the

disorder of the general health and the absence of menstruation, it is exceedingly important to recognize from a therapeutical point of view. "The function of menstruation," says Sir Charles M. Clarke, "like the other functions of the body, is best performed when the system is in health. Now, health is not constituted by excess of fulness, or by the performance of violent actions, any more than by debility or enfeebled action; consequently the exhibition of stimulants will not influence this secretion, unless attention be given to the restoration of the general health of the patient even in cases of debility. Still less will such a mode of treatment be applicable to cases of interrupted menstruation occurring in plethoric habits, where the plethora itself is the cause of the interruption of the due performance of the natural secretions. Instead, then, of resorting to such measures—let the morbid peculiarities of the constitution and the habits of life of the patient be taken into consideration; let the first be counteracted, the second be improved; let the sanguine have her excess of fulness diminished, let the debilitated have her powers augmented; in short, let the general health be amended, and the functions of health will be restored."* This is sound doctrine. The fruitlessness and absurdity of attempting, by so-called emmenagogues alone to cure amenorrhœa coexisting with impaired health, are obvious. It must be held to be decidedly improper, by local stimulation of the uterus, to attempt to produce a menstrual flow in a phthisical patient, for instance—certainly, to give a prominent place to such treatment. It is the experience of all observant practitioners that those remedies act most efficiently as emmenagogues which produce a most decidedly beneficial effect on the defective condition of the general health. In treating such cases successfully, the production or the re-establishment of the menstrual secretion is the *final* result to be attained. Improvement in other respects must be effected first; the rest will follow as a matter of course, in the vast majority of cases.

The treatment, then, must be general—to find out what is the weak point, and to attack this. Either the patient has been living badly, taking too little food, or food not sufficiently nutritious—suffering, in fact, from a form of chronic starvation; or she has been leading a life too seden-

* "Diseases of Females," part ii., p. 38.

tary or too artificial, deprived of pure air—in short, subjecting the body, at a very critical period, to many influences known to be incompatible with sound health. A very important element in the treatment of amenorrhœa in many cases is the employment of *rest*, especially at the time when the menstrual period might be expected to occur. More particularly is this necessary in cases where the amenorrhœa has been brought on by over-exertion and under-feeding. Thus, I may cite the case of a young lady who had not menstruated for over a year, and had plainly taken too much exercise and too little food. She was directed to maintain the recumbent posture for some weeks, but she had only carried out these directions for a fortnight when the menstruation returned, and was afterward regular in its appearance. In cases where we may not think it necessary to prescribe exertion, the horizontal position should be frequently adopted instead of the sitting one. We thus relieve the heart of a part of the work it has to do, and at the same time relieve the uterus from undue pressure.

In the industrial classes of the community, neglect of hygienic laws is still productive of an immense amount of mischief in this respect. In the higher classes of society it is too frequently the case that the solicitude of parents as to the mental culture of their children interferes materially with maintenance of physical health; and in schools there has been too little time devoted to exercise, and too much to sedentary intellectual work. The fault which is frequently committed in the management of young women and girls at school is the want of adjustment of the amount of exercise to the particular case. Some girls are strong and well nourished, and such may be benefitted by a good long walk, always provided that they are *trained* to such exercise. On the other hand, girls who have not been well fed, whose tissues are weak and relaxed, succumb frequently, or lay the foundation of serious disease after a course of long walks for which they are not fitted in any sense of the word. What that serious disease may be has been described in the chapter on the Etiology of Flexions (see p. 179). From the facts there cited it is sufficiently evident that, unless carefully regulated, severe exercise is dangerous in the case of young women not strong and not well fed. It has been the practice to recommend horse exercise, long walks, etc., in cases of amenorrhœa. I have seen several cases where this

advice has been productive of great injury. It is needless to add, that the observance of early hours, administration of good and nourishing food, thorough ventilation, warm clothing, are all essentially necessary for the preservation of health during the two or three years preceding and following the date of commencement of menstruation. Observance of these rules—necessary to maintain individuals of good constitution in a state of health—is doubly necessary when there is a tendency to "weakness," or when disorder of any kind is actually present. On the important question of the *dietary*, and the effects of insufficient food (qualitative as well as quantitative), see a former chapter, p. 132.

We generally find, as an effect of the bad state of health of the patient, partly also as a cause of the same, that there is great sluggishness and inactivity of the digestive organs, evinced by want of appetite and constipation; and hence, before it is possible to administer the amount of nutritious food the patient requires, it is frequently necessary to effect an improvement in the condition of the digestive organs. Five or ten grains of the compound rhubarb pill, followed by a small dose of an aperient saline such as Friedrichshall water or Hunyadi Janos the next morning, may be given once or twice a week at first. Stronger medicines are rarely necessary. Hygienic measures, exercise in the open air, sponging with cold water, friction of the skin night and morning with a rough towel, these are valuable accessory measures, the importance of which must be thoroughly explained to the patient, or they will not be regularly and efficiently carried out. The patient should be well clothed, and great care taken to keep the surface and extremities warm. "It is," says Sir James Clark, "of the greatest consequence to invalids to maintain an active state of the circulation in the surface and extremities, which cannot be done in this country without the assistance of warm clothing." These remarks apply with great force to the particular cases now under consideration. After a few days, tonics, as iron and quinine, may be given twice or thrice daily, the condition of the bowels being regulated according to circumstances. One teaspoonful of castor-oil given every morning is a very efficient remedy, when the patient is not strong enough to take much exercise, and when straining at stool must be avoided.

The efficacy of iron in cases of amenorrhœa is very great.

It is best given as one of the components of a natural mineral water. As a medicine, it may be given in almost any form. The syrup of the phosphate is a good preparation. The citrate of iron and quinine is a good combination of the two remedies.

The dyspepsia often present in such cases is a most troublesome complication, and is best treated by administering *frequently and in very small quantities*, for some days together, food of the simplest character; avoiding all solid matters, and giving the patient only such food as it may be found by experiment she is able to digest freely and easily. Milk and water, weak beef-tea, yolk of egg beaten up uncooked with milk, soups, Valentine's meat juice, are some of the most nutritious and easily digested foods. In some cases the use of artificially pre-digested food is a most valuable resource.

Wine is useful in many cases, particularly where the patient has been in a state of chronic starvation (and such a state of things is not confined to the lower classes of society) for some months or possibly years past. The wine assists the patient to take food, and certainly materially supports the strength. To the administration of meat food I attach much importance. It should be given two or even three times a day or oftener, but in small quantities at a time (see pp. 133, *et seq.*).

Every means that can be devised to put the body in a sound state of health will be beneficial as regards the end in view—the induction of menstruation. This point must ever be kept in view: amenorrhœa is only a symptom, not a disease.

After suitable means have been well tried, and the condition of the health improved, it is occasionally advisable to send the patient to the sea-side for a short time, or at all events to order a change of air. In some cases, when medicines of a ferruginous nature are not borne well, it is found advantageous to send the patient to live in the neighborhood of a chalybeate spring. The small quantity of iron which the water contains enables it to be taken, besides which, the change of air, scene, and occupation has a most beneficial effect in improving the condition of the health. The waters of Schwalbach, Spa, Pyrmont, Driburg, Kissingen, are some of those most to be recommended for internal administration. The ferruginous waters are not, however, to be exclusively recommended in obstinate cases of ill

health associated with amenorrhœa, for in some cases the continual use of hot baths, such as those of Vichy, Ems, Carlsbad, Wiesbaden, or Baden Baden, do great good by increasing the action of the skin and of the secreting apparatus generally. Above all, patience is necessary in the treatment; we must not expect the discharge to appear at once, and, in point of fact, the patient usually improves in all other respects before this evidence of the cure being completed is obtained.

Are emmenagogues, then, never to be given with the view of producing in a more direct and immediate manner the catamenial flow? But rarely. They are more especially applicable in the cases to be presently considered, where there is suppression. The actual and immediate production of the menstrual flow in the class of cases now concerned is, however, advantageous in one way, that it sets at rest any doubt we may have as to the possibility of menstruation. And the more direct action may be sought to be induced in cases where general measures have been fairly tried and found unavailing; also in cases where, the general health being good, and no attempt at menstruation observed, it is thought expedient to try this method of treatment as a kind of *dernier ressort*. The best method to follow in endeavoring to induce directly this action of the uterus will be considered presently.

Chlorosis and Amenorrhœa.—What has been said respecting the management of cases of amenorrhœa, with disorder of health of whatever kind, is here applicable. These cases are now and then obstinate, and in a chronic case time and patience are requisite. The bowels are generally very costive. Daily, a laxative draught should be given, the medicine selected being that which acts most easily—rhubarb, Rochelle salt with manna, castor-oil; these are some of the simplest we can select, and by no means the worst; and once a week or so a stronger draught containing decoction of aloes with some aperient salt may be required. Ferruginous preparations are essential; small doses are generally the best; and they are most efficacious when given as constituents of mineral waters. It is often a matter of experiment as to which form of iron suits the best. The subjects of chlorosis are often so debilitated that great care is at first necessary, and they are unable to take much food or to bear much active exercise. Hence a vigorous treatment is not at first advisable. We must adapt the food and the

regimen to the strength of the patient. Wine and good food are most essential in the management of these cases.

Amenorrhœa with Vicarious Menstruation.—The object of the treatment in these cases is first to improve the state of the health, which is generally bad, by tonics, etc., and secondly, to endeavor to induce congestion of the uterus and pelvic viscera at the menstrual periods. The patient should be treated, in fact, as if she were the subject of menstrual suppression. Lastly, it will be necessary to alleviate any discomfort, pain, or inconvenience which may be consequent on the unusual discharge.

TREATMENT OF SUPPRESSION OF MENSTRUATION.

In a case of *acute* suppression of the menses, if seen in time, the proper treatment would be to place the patient immediately in a warm hip-bath, and to administer a stimulant, such as hot gin and water, and, especially if a sudden chill be the cause, to endeavor to excite the action of the skin by placing the patient in bed, and giving a dose (ten to fifteen grains) of Dover's powder. A sinapism should be applied to the hypogastric region; hot-water bottles or bags to the lumbar region. In strong or plethoric habits, cupping to the loins, or venesection, would be proper; leeches to the upper and inner part of the thigh might be used in most cases. It is probable that the most powerful means of inducing the return of the discharge under such circumstances would be either the application of electro-galvanism, or the administration of an enema containing aloes by the rectum. It generally happens, however, that when the patient comes under observation the period for such treatment is gone by. We must in such cases wait until a day or two before the next period, and then apply suitable remedies. The remedies consist in keeping the patient quiet, maintaining a comfortable temperature of the body generally, placing her in a hip-bath, with mustard, night and morning, for three or four times if necessary, administering two or three times a day a warm stimulating draught, and if the case be obstinate, and other circumstances do not forbid, in using galvanism, or some one of the emmenagogues to be presently spoken of. Opium is a most valuable remedy in cases where mental emotions have had to do with the suppression. We now and then meet with cases of sudden suppression in young women of

weakly habit, who have been subjected to disturbing emotional influences at the menstrual period. In these cases, opium, and a supply of good nourishment, should be both freely given, and rest and quietude enjoined.

Many different medicines or remedial measures are set down as efficacious in inducing the flow of the menses; but they are exceedingly uncertain in their effects and action in different individuals, and very frequently have no effect whatever. Most of the so-called emmenagogues act, it must be concluded, by producing congestion and fulness of the vessels of the uterus and surrounding parts. The following are some most recommended: aloes in form of enema, dissolved in soap and water (Aran); the old pill of aloes and myrrh of the Pharmacopœia, which should be given in doses of five grains or upward, every night and morning, for a few days prior to the expected period; liquor ammoniæ, dissolved in milk (a teaspoonful of the ammonia in a pint of milk injected into the vagina); savin, the oil of which may be given dissolved in mucilage in doses of three or four drops (Sir Charles Clarke, Dr. Tilt, and others); iodine (Dr. Rigby, who preferred it in the form of iodide of iron); Sir Charles Locock found a combination of myrrh, aloes, sulphate of iron, and the essential oil of savin, frequently of great utility. Ergot of rye, in doses of ten grains three times a day, is also highly spoken of by the same authority.

Mustard has been said (Ashwell, Rigby) to have an emmenagogue effect, given in doses of ten or twelve grains. The syrup of the iodide of iron is the remedy I have most frequently employed, and I think highly of it for long-standing amenorrhœa originally arising from suppression.

Sir J. Y. Simpson employed as a means of cure the application of direct stimulants to the interior of the uterus—nitrate of silver, cantharides, or iodine—by means of a *porte caustique*, the application to be made at the time when menstruation should occur, and repeated at monthly intervals; he also recommended a kind of dry cupping of the interior of the uterus, and the employment of galvanic intra-uterine pessaries of peculiar construction, in the form of amenorrhœa now under consideration. Dr. Althaus states that he has in many cases found great benefit from Faradization assiduously and properly applied. Pulvermacher's apparatus is also a most simple and ingenious method of continuously applying this therapeutic agent,

and is peculiarly suited for chronic cases of amenorrhœa after the general health has been re-established by suitable means.

Cases of *chronic suppression* require to be treated on the foregoing principle—first, to correct the ill health generally present, then to encourage month by month, by gentle measures, the return of menstruation.

TREATMENT OF CASES OF MENSTRUAL RETENTION.

The various physical conditions giving rise to menstrual retention require each a suitable method of treatment.

1. *Absence of Vagina and Menstrual Retention.*—Here menstruation is not possible, there being no communication between the vulva and the uterus. Absence of such a communication is sometimes associated with defective development of the uterus; and in such cases, even if a communication existed, menstruation would not for that reason occur; but in other instances, although the vagina is wanting, the uterus is well developed, and menstrual blood is poured into its cavity at each menstrual period. The distension of the uterus may be very considerable, the sufferings of the patient gradually increasing in intensity, chlorosis and other signs of grave constitutional disorders being present. The only treatment capable of affording relief is surgical. The difficulties encountered in affording such relief vary in different cases, but are always very much greater than in the case of imperforate hymen with retention. And not only are the difficulties greater, but the danger from an operation is more considerable.

The case operated on by Amussat * will probably always be quoted at once to illustrate the difficulties of an attempt to make a vaginal canal, and to point out how these difficulties may best be overcome. The case was that of a girl aged 15½ years, in whom the vagina was absent, and who had suffered from symptoms of menstrual retention since the age of 13. There was a tumor above the pelvis the size of the uterus at six months' gestation. The tumor was felt from the rectum; the urethra was the only opening at the vulva, and a sound passed into it could be felt from the rectum through a very thin partition ("à travers des parties très minces"). The diagnosis was evident. Thereupon

* "Gaz. Médicale," 1835, pp. 785 and 817.

Amussat, after stretching the vulva, pushed the handle of a sound upward beneath the urethra, and then, using the little finger in a similar manner, sought to make a passage toward the fluctuating pelvic tumor, in the direction of the vagina. By drawing the perineum downward and at the same time pushing the finger inward, a sort of separation was effected. Sponge was now inserted to maintain the dilatation, and three days later this combined tearing and dilatation process was resorted to anew. After two further attempts, on the two following days respectively, the tumor was finally reached. The dilatation was kept up by means of sponge. On the tenth day after the first operative procedure the tumor was punctured, first by a trochar, and next by a bistoury, and the menstrual fluid, so long retained in the uterus, allowed to escape. The tumor was, at the time of the operation, two inches from the vulva. The opening into the uterus was enlarged, and a canula inserted. Inflammation of the left Fallopian tube resulted, clots were expelled from the rectum. Four times after this the patient suffered from menstrual retention, but a cure was finally obtained, and she was restored to such perfect health that two years later the question of the propriety of marriage was seriously discussed.

Amussat rejected the use of the knife from the obvious difficulty of avoiding the bladder on one side, and the rectum on the other. The chief difficulty of following Amussat's plan is the tediousness of the procedure, and the objection on the part of the patient to its continuance. In a case related by Bernutz* the operative procedure was interrupted for this reason, when, as it appeared from what took place subsequently, tumor of the uterus was on the point of being reached. In a case very much resembling that of Amussat's, Dr. Braxton Hicks was prevented completing what promised to be a very successful operation for the formation of a vagina, in a similar way.†

Another method of treatment which has been adopted in cases of this kind is to puncture the uterus from the rectum. It is obvious that this procedure is open to the serious objection that the passage made for the escape of the menstrual blood is not in the natural position, while the evacuation of the fluid is also less under the operator's control. It appears that in some cases, however, the septum between

* *Loc. cit.*, p. 307.

† "Obst. Trans.," vol. iv., p. 232.

the urethra and rectum is so thin as not to admit of the attempt to form a passage to the retained fluid in that position.

If formation of a vagina be really impossible, this tapping of the uterus from the rectum is the only alternative. For the performance of the operation a curved trochar is necessary, and great care must be exercised so as to avoid injuring the bladder. The observations as to the manner in which the fluid should be allowed to escape from the uterus, which will be presently made in relation to imperforate hymen, here apply with still greater force. The evacuation of the fluid must be made very slowly, the recumbent posture must be maintained, and opiates will be probably required.

An interesting case was related to the Obstetrical Society by Mr. Baker Brown, in which there was vaginal atresia with menstrual retention of two years' duration, the uterus as large as at four months of gestation. The uterus was tapped as above, the trochar left in for a fortnight. A month later the patient menstruated per rectum. In two cases, very similar to the one related by Mr. Brown, Dr. Braxton Hicks performed the same operation, and evacuated the contents of the uterus successfully. Dr. Hicks considers that the canula should not be left in the opening thus made for longer than ten or twelve hours; to avoid the introduction of air he recommends the canula to be plugged just before the complete evacuation of the uterine contents.

Dr. Emmet has operated very successfully in some cases of the same kind. He procures a passage by a combined process of cutting and tearing, using a trochar finally to draw off the retained menses, and washing out the uterus at the end of the process and inserting a glass dilator. Dr. Galabin* records two cases where a somewhat similar operation was performed; but his experience was unfavorable to the use of an injection into the uterus as a part of the operation, for one of the two patients died. Dr. Galabin considers the congenital cases more unfavorable for use of injections. He also cites four cases of operation in which the occlusion was the result of cicatricial contracture following labor or operative procedures, in which he allowed the fluid to drain off after puncture, not using uterine in-

* *Obst. Journ.*, 1878, p. 360.

jections until twelve hours after; all the four cases doing well.

As regards the general question of the success attending operations of the above character, it appears that so far as the relief of the retention is concerned they are tolerably successful; and there is no great difficulty in maintaining an outlet sufficient for escape of menstrual products. But as regards the maintenance of a vaginal canal sufficient for marital purposes, experience shows that this is frequently a matter of great difficulty, and that repeated operations with much and persevering use of dilators are required, in most instances, to preserve a sufficiently large vaginal canal.

2. *Imperforate Hymen with Menstrual Retention.*—The operation required in these cases is perforation of the hymen. In a certain number of cases death has taken place after perforation of the membrane, for the relief of menstrual retention, and blood has been found effused into the peritoneal cavity, thus giving rise to peri-uterine hæmatocele. In other cases death has occurred, without effusion of blood in this manner, from peritonitis and pyæmia.

[The operation for the evacuation of retained menstrual fluid has been often attended with fatal results.

It was formerly the custom to make a small valvular opening in the obstructing membrane, whether it be at the hymen, the os tincæ, or at some intermediate point in the course of the vagina between these two. This allows the fluid to escape slowly. Death occurring from this simple operation has been the result of air passing into the cavity, decomposing a part of the fluid and thereby causing blood poisoning. But we now no longer look upon this operation with the dread that we formerly did, for Dr. Emmet has taught us that the safest method of operating is to evacuate the retained fluid at once, if possible, and then immediately wash out the cavity with warm water, antiseptized, and repeat this as often as necessary to keep the uterine cavity clear of septic material..

Dr. Emmet reports twenty-two cases of retention of the menstrual fluid: four due to imperforate hymen, seven to congenital absence of the vagina, nine to congenital atresia of the cervix, two to traumatic atresia, making twenty-two; and all recovered without a single death. Thus we think that his experience establishes a rule of practice which we may always follow safely.]

In these cases of menstrual retention, the uterus, the

Fallopian tubes, and the vagina, are distended with blood, the uterus attaining sometimes a very great size, and reaching as high or higher than the umbilicus in extreme cases; this state of things having persisted for several months, in some instances even for years, before the nature of the case has been recognized, or, at all events, before effectual relief has been attempted. The cavities containing the blood have their walls greatly thinned and otherwise altered.

Bernutz* thought the unfortunate result, when associated with intra-peritoneal hæmorrhage, due to the contraction of the uterus, set up by the evacuation of the fluid, continuing and forcing the blood contained in the Fallopian tubes into the peritoneal cavity. This explanation probably holds good in most cases of this kind. The fatal result, in some instances, may be due to a combination of one or more circumstances. The sudden withdrawal of the distending force in cases where the walls of the Fallopian tubes have been thinned and enlarged, must itself have an injurious effect on the vitality of the tissues of the part in question. A certain number of deaths are to be attributed to purulent absorption, the admission of air producing decomposition of the blood and pyæmia. It is evident that the circumstance pointed out by Bernutz is exceedingly important in reference to the plan of treatment to be adopted in these cases.

A careful survey of the facts on record would seem to lead to the conclusion that a fatal result is much more likely to occur when the retention has lasted a long time; and the prognosis would consequently be more favorable for an operation performed two months, than in the case of an operation performed six months after the first attempt at menstruation. And this would clearly indicate the great importance of an early and complete diagnosis of the case. With respect to treatment, it is evident that in a case of retention due to imperforate hymen our only resource is surgical. A way must be prepared for the evacuation of the fluid. The mode of performing the operation which I consider preferable is as follows: In the first place, it is desirable that the evacuation of the fluid be spread over as long a period as possible in order to prevent undue and irregular action of the uterine fibres, and to allow time for the parts to return in the most gradual manner to their proper

* "Clin. Méd. sur les Maladies des Femmes," tom. i., p. 68,

size. In the second place, it is absolutely necessary to avoid all possibility of passage of air into the vagina and uterus during or after the operation. The plan formerly adopted was, by means of a lancet, or bistoury, or trochar, to make an opening in the hymen sufficient to allow of the escape of the chief part of the retained blood at once. I believe it better to make an opening at first just large enough to allow of the escape of a very minute quantity of fluid, and that this opening be made obliquely in the obstructing membrane, giving it a valvular character. The fluid should be evacuated *guttatim*. If the opening become closed, a second and similar opening to be made the following day, or two or three days later, and a firm but gentle support given to the abdomen by the aid of a bandage and carefully adjusted pad of cotton-wool during the whole period of evacuation of the fluid. The patient to be kept in a state of absolute rest. The aperture in the hymen should not be increased in size until the uterus has returned to its proper dimensions, the object being, at first, simply to allow the fluid to escape in the most gradual manner possible. If, by any chance, air enter, and the fluid become decomposed, it would be safer at once to make a free opening and freely employ antiseptic injections. It is satisfactory to find that this method, suggested in a former edition of this work, has been adopted by others, and found to answer well. I have found it satisfactory and reliable in the cases which have come under my own notice. It is questionable whether the practice of injecting water into the uterus as a *primary* procedure after an operation of this kind be safe. Bernutz recommends that in evacuating the fluid a period be chosen for the operation eight or ten days after a menstrual period, and that a small trochar be used. He considers pressure over the abdomen objectionable. In the latter particular the method recommended by myself differs from that of Bernutz, for I consider, and my plan has been tested in practice, the pad and bandage indispensable. In other respects the principle of the two methods is identical, in both the necessity for slow evacuation of the fluid being recognized.

3. *Retention from Imperforate Os Uteri.*—Cases of *complete* retention due to this cause are rare. The more ordinary cases of *incomplete* retention—in other words, dysmenorrhœa—will be dealt with in the chapter on “Dysmenorrhœa.”

CHAPTER XXXIII.

MENORRHAGIA.

DEFINITION.—Various Forms of Menorrhagia.

PATHOLOGY AND ETIOLOGY.—Relation of Pregnancy and Abortions to Menorrhagia and Metrorrhagia—General or Constitutional Causes—Locality—Lead Poisoning—Sexual Excesses—Pyrexial Disorders—Cancer of the Uterus and allied Affections—Polypi and Fibroid Tumors—Peri-uterine Hæmatocele—Chronic Inversion of the Uterus—Climacteric Hæmorrhages—Flexions of the Uterus—Chronic Congestion of Uterus and Hypertrophy of its Mucous Lining (so-called Fungosities)—Relation of latter Conditions to Flexion—Defective Involution—Abnormal Conditions of Os Uteri—Laceration—Eversion—Hypertrophy—Small Mucous Polypi.

DIAGNOSIS.—Examination of Uterus—Examination of various Substances expelled.

GENERAL TREATMENT.—Tonics, Baths, Medicines and other Measures.

LOCAL TREATMENT.—Intra-uterine Cauterization, and Removal of Mucous Membrane by scraping.

The term "menorrhagia" implies an excessive menstrual discharge. The term "metrorrhagia" indicates hæmorrhage from the uterus not menstrual in origin. At least this is the ordinary distinction drawn between them.

When a discharge of blood occurs from the female generative passages, it may proceed from the uterus, as is generally the case, or it may prove to be a hæmorrhage from the vaginal wall, from the vaginal outlet, from the bursting of a varicose pudendal vein, or from the urethra. Hence cases of bleeding from the generative passages are not necessarily cases either of menorrhagia or metrorrhagia.

The catamenial secretion appears to be naturally more profuse in some individuals than in others, the quantity of the secretion being great, or the period during which it is observed being extended, from the presence of what may be characterized as idiosyncrasy, from the influence of climate, age, and the like. All these circumstances must be taken into account in giving an answer to the question, "Is the catamenial secretion excessive?"

The forms under which menorrhagia and metrorrhagia present themselves are numerous. The following are some of the more common forms in which these unusual losses of blood from the generative organs exhibit themselves;

1. The menstrual discharge becomes gradually from month to month increased in quantity, until in the aggregate the quantity lost is really considerable.

2. The loss at the monthly periods is great, and accompanied by passage of clots, pain, etc.

3. The patient loses an excessive quantity of blood at the periods, and occasionally also in the intervals a copious discharge of blood suddenly occurs.

4. There is an almost continuous discharge of blood from the generative organs, sometimes with clots, alternating with leucorrhœa.

5. The loss of blood occurs suddenly, and not at the menstrual period, and is accompanied by pains in the back or region of the uterus.

This list might be indefinitely increased. The variations in regard to the attendant phenomena, pain, intermittent leucorrhœa, offensive character of the discharge, and prostrating effects on the system, are also numerous.

In seriousness of character, also, we have many varieties. In many instances the loss of blood is simply an inconvenience; in others the patient's life is in peril from the quantity lost. In other cases, again, the prognosis is unfavorable because the disease occasioning the loss is a serious one.

PATHOLOGY AND ETIOLOGY.

Undue bleeding from the uterus may be produced by a great variety of causes, and the difficulty of differentiating these various causes is increased by the circumstance that the uterus being the source of a periodical natural bleeding, there is a predisposition to hæmorrhage from this organ which does not exist in the case of other organs of the body.

Relation of Pregnancy and Abortions to Menorrhagia and Metrorrhagia.—Here it may be desirable, in connection with the subject of menorrhagia, to allude to that important class of cases in which the loss of blood is due to pregnancy.

A discharge of blood from the generative organs in a case where menstruation has been previously absent for a month, or for a period of two or three months, and in a woman whose age does not forbid the idea of pregnancy, should *always*, whatever be the condition and circumstances of the patient, suggest the possibility of abortion.

In cases of abortion, the menses are found to have been

absent for from two to four or five or six months; the hæmorrhage which occurs begins slowly, preceded sometimes by shivering, nausea, pains in the back and thighs, etc.; and is accompanied by pains at the lower part of the abdomen, resembling, and in fact identical with, those of labor. The hæmorrhage is not continuous, but pauses, and recurs again after ceasing a few minutes or more. There is generally, too, a periodicity in the recurring attacks of pain and hæmorrhage. At the end of a few hours, or, in some cases, a shorter interval, the ovum, or portions thereof, are expelled, together with clots; and if the expulsion have been complete, the hæmorrhage ceases, unless perchance there be a second ovum still in the uterus, as in case of twins. The expulsion may be delayed for a much longer time, or the embryo may be expelled, leaving the membranes behind, and in such cases the hæmorrhage continues, becoming at times very profuse. Hæmorrhage from the uterus, more frequently than is usually supposed, occurs from abortion at about the second month in married women; the real cause being often overlooked, and the case supposed to be one of simple menstrual irregularity. I have known cases of abortion which have nearly proved fatal owing to their being mistaken for simple menorrhagia. The diagnosis of early abortion from excessive menstruation is indeed often far from easy. If the abortion take place at an early period, examination of the uterus from the vagina gives no positive data for determining the point. The only reliable evidence obtainable at this period is that afforded by a very careful examination of the clots or matters expelled from the uterus. (See Substances expelled from the Generative Passages.) At a later period, the evidence from the physical condition of the uterus is more decided.

If an abortion have occurred recently, and hæmorrhage take place a few days after, recurring possibly on successive occasions, it may turn out, on inquiry or on examination, that the embryo has been expelled, but the placenta, or some portion of the membranes, retained. Such retention is often a cause of most severe and dangerous hæmorrhage. The placenta is small in the case of an ovum at three to four months; but yet, when retained in the manner stated, it may be the cause of severe and extensive hæmorrhage. When the embryo is expelled earlier than this, the part left behind is constituted chiefly by the decidua; and

this substance may become thickened and hypertrophied to a very remarkable extent. A vaginal examination is always necessary in a case of suspected abortion. We must not rely too much on the assertions of patients. Sometimes clots only have come away when it is stated that the abortion has occurred.

During the last three months of pregnancy, hæmorrhage now and then occurs from the placenta being attached partially or entirely over the mouth of the uterus—*placenta prævia*. We draw the inference that when, in the latter part of pregnancy, hæmorrhage suddenly occurs, the presence of placenta prævia is to be suspected. Between hæmorrhage the result of an abortion, and of placenta prævia, there is this difference: in the case of abortion, the patient may or may not be aware of her pregnant condition, or, knowing her pregnant state, may have reason for wishing to mislead her attendant; in cases of placenta prævia the patient is usually known to be pregnant. Hæmorrhage may occur during pregnancy, and may be profuse, when there is nevertheless no implantation of the placenta over the os uteri; the cause being a separation to a slight extent of the placenta from the uterus. Such hæmorrhages have been called in obstetric language "accidental," as distinguished from the "unavoidable" hæmorrhages the result of placenta prævia. An "accidental" obstetric hæmorrhage may or may not be followed by expulsion of the child.

General or Constitutional Causes.—The condition of the blood itself is undoubtedly an important etiological element in many cases. The various diathetic conditions which are known to predispose to hæmorrhages generally come under this classification.

Persistent and repeated hæmorrhages of any kind, by producing a weak, watery, defibrinous condition of the general circulating fluid, may thus give rise to menorrhagia and metrorrhagia. *Purpura, or the tubercular diathesis*, may induce bleeding from the uterus much in the same way.

Bright's disease of the kidneys, indicated by an albuminous condition of the urine, generally accompanied also with œdema of the ankles, eyelids, etc., is one of the most important general causes of menorrhagia. *Excessive lactation* is another equally important cause; patients are often excessively debilitated under these circumstances: as a further consequence in these cases of excessive lactation, *mania* is

not unfrequently observed. *Long-continued mental depression* is both a cause and an effect of menorrhagia. Then we have a large number of cases due to *chronic disorder of the digestive organs*, leading to congestion of the uterus and pelvic organs generally, *chronic affections of the great viscera, the heart, lungs, and liver*, also giving rise to the congestion of the pelvic organs, and, short of actual disease, general derangement of the system produced by *luxurious living and sedentary or unhealthy occupations*.

Residence in damp or marshy districts, where *malarious influences* are rife, has been shown to be the cause of profuse menstruation in certain cases: here menorrhagia is not unfrequently present together with intermittent fever. *Residence in tropical climates* is, in the case of Europeans, followed, in most cases, by profuse menstruation; indeed, in most cases where women return to England from India in a broken-down state of health, menorrhagia is a prominent symptom. Troublesome flexions of the uterus are also frequently found in such patients.

Menorrhagia may be present *in cases of leaa-poisoning*. It was first pointed out by Paul * that abortions are very frequently observed in women subjected to the influence of lead, and also that in the same class of cases menorrhagia is very common. I have observed facts which are quite confirmative of Paul's statement. Mr. Benson Baker has contributed further facts confirmatory of Paul's statements.†

Sexual excesses, or circumstances calculated to excite and maintain the existence of erotic tendencies for any length of time, produce occasionally such a degree of functional activity of the ovaries as results in the production of profuse menstruation, and of hæmorrhage at non-menstrual periods. The amount and character of the menstrual discharge being thus guided and affected by the condition of the ovarian function, it is not to be wondered at that, when the ovaries are the subject of disease, the uterine sanguineous discharge should be also deranged. More generally the presence of ovarian disease diminishes, or at all events does not increase, the menstrual flow; but the reverse has been pretty frequently observed. Mechanically, also, and in

* "Arch. Gén. de Med.," 1860.

† "On the Influence of Lead-poisoning in producing Abortion and Menorrhagia, with Cases,"—"Obst. Trans.," vol. viii., p. 41.

common with other adjacent organs, disturbances of the circulation in the ovaries may tend to hæmorrhage from the uterus. The practical deduction is that, in a given case, functional activity of the ovaries, or disease of these organs, may be the cause of uterine hæmorrhage, the uterus itself being really in a healthy state.

Pyrexial Disorders.—Perroud (*Gaz. Méd. de Lyon*, Jan., 1862) has observed that an occasional effect of the onset of the pyrexial disorders is the appearance of the menstrual flow a few days before its time. In scarlet fever, small-pox, measles, unusual profuseness of the menstrual discharge, in some cases associated with the accident known as peri-uterine hæmatocele, has been observed. Mr. Benson Baker, who has made numerous observations in reference to small-pox, states that this sudden appearance of menstruation was a frequent premonitory symptom. Profuse menstruation is also liable to occur as one of the *sequelæ to fevers*.

Mental disturbances may give rise to a flow of blood from the uterus of purely menstrual character, although not appearing at the ordinary menstrual period.

ORGANIC DISEASES OF THE UTERUS.

Cancer of the Uterus.—Of this occasionally insidious and very fatal disease, hæmorrhage to a greater or less extent is a prominent symptom, though not invariably so. The amount and periods of occurrence of the hæmorrhage vary according to the seat of the disease and the stage to which it has advanced. When a woman has entered on what may be called the "cancerous age," and begins to suffer from menorrhagia with occasional losses of blood besides, or when, having ceased to menstruate, hæmorrhages are observed, the possibility of this symptom being due to cancer must be recognized. Later—that is to say, when the disease is more advanced—hæmorrhage is rarely the only symptom present, and we have generally much pain, an offensive sanious leucorrhœa, and constitutional disturbance. One point must particularly be recollected, that, for a certain time, hæmorrhage may be the only sign observed.

Thus, in a series of cases carefully observed by Dr. West, hæmorrhage was the first symptom in 43.9 per cent of the cases. In certain cases there may be an entire absence of the sign now under consideration, there being only profuse

menstruation. Another circumstance, also rare, but which may be subject of observation, is that the hæmorrhage is unattended with pain. In an instance noted by myself the first occurrence of hæmorrhage was produced by sexual intercourse, the patient, aged 48, being affected with undoubted cancer.

Cauliflower excrescence of the os uteri gives rise, as a rule, to hæmorrhages of an irregular character. The hæmorrhage is usually brought on by walking, by exertion of any kind, by coughing, sneezing, etc. There is usually offensive watery discharge in cases of this disease.

Sarcoma of the uterus and corroding ulcer of the os uteri are rare affections, attended with hæmorrhage, like that of ordinary cancer, of which disease they are probably only varieties.

Polypi and Fibroid Tumors.—The several kinds of *polypi* of the uterus produce hæmorrhage, often very severe, and sometimes of an ultimately fatal character. The abundance of the hæmorrhage is not by any means in direct proportion to the size of the polypus, but depends rather on the degree of vascularity present. The hæmorrhage is irregular in character, and, coinciding more or less with the menstrual discharge, as it frequently does, it may be at first overlooked; its tendency is to increase in quantity, but the march of the symptoms is slow, and if the loss be not considerable, the general health may remain little affected. A most important class of cases is that in which polypi, entirely within the uterus, occasion severe hæmorrhage, the cause of the hæmorrhage escaping recognition owing to the absence of dilatation of the os uteri. Sir J. Y. Simpson was the first to point out the necessity for exploring the interior of the uterus, by dilatation of the os uteri, in suspected cases of this kind. When the polypus becomes very large, "pressure" signs, such as difficult micturition, difficult defæcation, accompany the enlargement of the uterus. Abortions are frequently due to uterine polypi. Clots or partial moulds of the uterine cavity are found sometimes in the discharges. With reference to the kind of polypus present, the nature of the hæmorrhage gives us no precise information. Very profuse hæmorrhage sometimes results from very small tumors—"mucous" polypi, as they have been called—situated just inside the os. In cases of polypus uteri, there may be profuse leucorrhœa, and there may be much pain; but the leucorrhœa is

not, except in rare instances, offensive, as it is in cancer, and the pain is of a different character. Moreover, the patient with polypus may, comparatively speaking, remain *in statu quo* for some time—an observation which does not apply to cancer. Cases are not rare in which uterine polypi remain for years undetected, the hæmorrhage, by its long continuance, finally sapping the very foundations of life, the skin becoming blanched and withered-looking, and the patient reduced to an extreme state of feebleness.

Fibroid tumors of the uterus, which have a composition identical with that of fibrous polypi, both being growths of the uterine tissues, may or may not cause hæmorrhage, the position of the tumor very much affecting this result. Thus, if the tumor project into the cavity (sub-mucous variety), the result, as regards the hæmorrhage produced, will be pretty much the same as if a polypus were present. The further the tumor is from the mucous membrane, the less frequently, as a rule, does hæmorrhage occur. In the early stages of these growths hæmorrhage may be entirely absent. Menstruation is generally excessive, both as regards duration and quantity; sooner or later other symptoms, interperiodic hæmorrhages, abortions, etc., are observed. When these fibrous growths attain a very considerable size, they often produce pressure signs, as in the case of large polypi. The hæmorrhage produced by fibroid tumors is often accompanied by a good deal of pain, and the pain is spasmodic, somewhat resembling that due to abortion. Cases of abortion are distinguished from cases of fibrous tumor with hæmorrhage by the circumstance that the pain and the hæmorrhage cease together in the former instance, but not in the latter.

PERI-UTERINE HÆMATOCELE.

Cases in which there is an *abrupt appearance of profuse menstruation* require a special mention. A sudden attack of this kind is found, in a certain number of cases, to be associated with a most dangerous and alarming accident, the pouring out of blood in the pelvis, in the neighborhood of the uterus, either in the peritoneal cavity or into the cellular tissue beneath the peritoneum, giving rising to formation of a tumor—*peri-uterine hæmatocele*—and the production of a series of symptoms of a highly interesting and important character. The sequence and intensity of

the symptoms, of course, vary in each case; they often present themselves in the following order: Previous good health, as regards menstruation, abrupt appearance of a considerable flow of blood from the uterus at a menstrual period, great pain in the abdomen, and symptoms as of perforation, a blanched condition of the skin, and all other signs of violent hæmorrhage, syncope, etc. The patient may die from the actual loss of blood effused under these circumstances into the peritoneum, or from the effects of the subsequent changes in the clot there formed. The accident termed peri-uterine hæmatocele is not always accompanied by profuse menstruation; indeed it very frequently happens that at the time of the occurrence of the internal hæmorrhage the external discharge is not observed. The most common case is perhaps that in which menstruation, having been generally and for some time rather profuse, becomes for a time either suppressed or much less than usual; the symptoms of internal hæmorrhage then suddenly appearing. The peri-uterine hæmatocele is not, it must be recollected, the *cause* of the excessive menstruation. The cause of both the excessive menstruation and the hæmatocele will be found in some predisposing general condition of the patient, or some previously existing change in the ovaries, tubes, etc., or both general and local disease combined. Irregularity of menstruation of some kind or other generally precedes the attack; and the practical fact to bear in mind is, that a suddenly occurring attack of profuse menstruation may be associated with this dangerous accident.

Chronic Inversion of the Uterus.—This is a condition capable of giving rise to severe hæmorrhage. Curiously enough, the existence of this condition is sometimes found, to have escaped recognition for so long a time after the delivery that the diagnosis of the nature of the case has been rendered very doubtful.

Hence the necessity for calling attention to the fact that hæmorrhage, occurring some time after a particular labor, may be due to inversion. As a rule, where the accident has escaped recognition, it is found that there has been hæmorrhage occurring at intervals ever since the delivery; that the hæmorrhage was at first very severe; that it gradually became less; that subsequently it assumed the character of excessive menstruation, the hæmorrhages for the most part occurring coincidently with the usual catamenial

periods; that between these, however, great losses of blood had been often observed. The hæmorrhage is not profuse and sudden in character, but it is a continuous drain going on for a certain time, and then ceasing partly or entirely. In such cases there is also profuse and purulent leucorrhœa. The symptoms, of course, date from a previous pregnancy; and, in nine cases out of ten, it is found that undue force was used in the removal of the placenta after the delivery in question. Polypus of the uterus gives rise to symptoms very closely resembling those of inverted uterus.

FIG. 146.*



Climacteric Hæmorrhages.—When the menstrual flow is finally about to cease, profuse losses of blood are apt to occur, and to recur at intervals for a considerable time. Climacteric hæmorrhages are more often observed in sanguine temperaments, and in those who have been the subjects of profuse menstruation. They sometimes simulate hæmorrhages due to cancer of the uterus.

Flexions of the Uterus.—Both retroflexion and ante flexion of the uterus may occasion very severe menorrhagia. The hæmorrhage is perhaps more liable to be very severe in cases of retroflexion, but I have seen very profuse losses of

* Fig. 146 represents an enlarged expanded uterus, such as is sometimes met with in cases of menorrhagia. Cases somewhat similar, the cavity being smaller, are more numerous.

blood from ante flexion. And inasmuch as ante flexion is more common than retro flexion, menorrhagia is more frequently produced by ante flexion than retro flexion.

The excessive loss of blood which is liable to occur in cases of flexions appears to be associated with the obstruction to the circulation in the organ, and is partly due to the obstruction to the escape of the blood from the uterus. And it is further increased by the congestive hypertrophy which is liable to affect the mucous lining of the uterus in such cases. In these cases a passive congestion affects the uterus, prevents the free passage of the blood, and the sinuses and veins become loaded therewith. The uterine cavity becomes filled with blood which cannot escape readily enough. Distension of the cavity follows (as described at p. 216), and after a time the collected blood is suddenly expelled in a sort of gush, this process of alternate filling and evacuation of the uterus repeating itself at intervals. When this state of things has been going on for some years the uterus is found in a state of general hypertrophy, the patient not only suffers from profuse loss of blood at the menstrual period, but bleedings are liable to occur at other times, and in some cases the patient is hardly ever free from loss of blood.

Although not a very common occurrence at that age, I have seen some few cases of most severe menorrhagia produced by ante flexion in *quite young women* at the age of seventeen or eighteen, the hæmorrhage being almost continuous and unchecked by remedies until the real nature of the case was ascertained. And equally I have seen very severe menorrhagia in quite young women suffering from retro flexion.

More commonly the severe cases of menorrhagia due to flexions are met with in women who have had children: the uterus imperfectly contracted after labor has settled down into a wrong shape, and menorrhagia has resulted from the distortion of the uterus thereafter occurring.

Chronic Congestion of the Uterus.—In many cases of menorrhagia or metrorrhagia the uterus is intensely congested. As explained in the chapters on Congestion and Flexions, this congestion is very frequently associated with flexions. It is in the large majority of cases a mechanically produced congestion, and one of its results is hæmorrhage from the lining of the uterus. One of the effects of chronic congestion of the uterus is to produce a swelling tumefac-

tion, and undue vascularity of the mucous lining of the uterus. This can be often seen by means of the speculum, so far as it affects the lining of the cervix, at the os uteri, where a light pink is exchanged for a deeply congested, hæmorrhagic appearance. The interior of the *body of the uterus*, however, is lined by a membrane of much greater vascularity than that of the cervix uteri. When the uterus is as a whole greatly congested the lining is, or may be, equally affected. The natural oozing of blood which occurs from this mucous surface during menstruation is thus liable to be increased in amount. The thickness of the lining is increased, and as the epithelial surface is removed (as a part of the natural menstrual process), and it becomes denuded, the surface thus thickened and injected with blood is thrown into folds and projections which assume a villous or fungous-like shape. This is the probable explanation of the fact that such a condition of the uterine surface is met with in some cases of menorrhagia. The villous projections, according to this view of the matter, are merely hypertrophies associated with great vascularity and passive congestion of the lining of the body of the uterus, and the state of the uterine interior under such circumstances is not indicative of new formations, but simply of an excessively swollen and vascular condition of structures which naturally are to be found there. The anatomy of the lining of the uterus and a knowledge of the changes occurring in this lining during the normal menstrual process naturally suggests the above explanation.

Clinical evidence clearly shows that most intense and chronic congestion of the uterus is associated with severe and chronic flexions. Menorrhagia is by no means present in all cases of severe flexion, but in a certain number of such cases there is very severe menorrhagia. The flexion does indubitably produce the bleeding in very many of such cases; and the bleeding occurs in consequence (1) of the mechanical impediment to the passage of blood through the capillaries of the mucous membrane. (2) Because of the hypertrophy and abnormal size of the vessels which permeate the mucous lining. According to this view the mechanical hindrance to the efficient circulation in the uterine vessels is the primary evil, and the presence of hypertrophy and vascularity of the mucous membrane the secondary one. Both co-operate in giving rise to hæmorrhage.

A further part of the explanation of the mechanism of bleeding from the uterine interior is the difficulty which the uterus experiences in getting rid of the effused blood. The blood collects in utero, distends it, and hence the area from which hæmorrhage occurs is increased (see chapter on Flexions, p. 215).

The case related at p. 149 is one which carries with it instructive inferences in reference to the etiology of menorrhagia, and particularly in regard to the connection subsisting between (1) chronic congestion, (2) chronic flexion, (3) chronic villous or fungous hypertrophy of the uterine mucous lining, and (4) severe hæmorrhage; for in this case, when the general congestion of the uterus was diminished (by straightening the uterus), the hypertrophic eminences previously engorged with blood became so much lessened in size that they had almost disappeared, and it became evident that what had been considered as fungous, possibly even malignant, growths from the interior of the uterus were simple congestive swellings of the mucous membrane.

The above is an explanation of the nature of the so-called *fungosities* of the uterine cavity which have attracted much attention as causes of menorrhagia, but the nature of which has not up to the present time been properly understood.

It is highly important to distinguish these simple hypertrophies from *malignant growths* within the uterus which may also assume the character of fungosities. Severe hæmorrhage may be produced by either simple or malignant growths in the interior of the uterus.

Defective Involution of the Uterus.—This is a cause of menorrhagia. The uterus is large and heavy, and blood is exuded freely from its interior. The condition is very analogous to that of chronic congestion, and, in fact, defective involution not uncommonly passes into one of chronic congestion.

Abnormal Conditions of the Os Uteri.—One of the most important of these, as a cause of menorrhagia, is *laceration of the cervix uteri*. I have seen some cases in which profuse menorrhagia was certainly due to this laceration.

Eversion of the lining of the cervix, whether or not connected with laceration of the cervix, may produce considerable loss of blood, the everted mucous membrane readily bleeding on friction against the floor of the vagina. The so-called "ulcerations" of the os are in many cases constituted by the abrasions in question.

Hypertrophy of the os uteri is not seldom associated with the foregoing conditions, and bleeding more readily occurs under such circumstances. The condition is important, because it might be mistaken for one of cancerous enlargement.

Small mucous polypi growing from the lip of the os uteri often occasion very profuse losses of blood, although they may themselves be no larger than a pea in size.

DIAGNOSIS.

The nature of every case must be adjudicated on its own merits. The foregoing account of the etiology and pathology of menorrhagia and metrorrhagia furnishes certain details on the subject. It must be needless to point out that a careful examination of the condition of the uterus and generative passages is essential, according to the methods described in other chapters.

In cases where unusual losses of blood have occurred, an important duty of the practitioner consists in the investigation and examination of the various substances, clots of blood, and the like which have been expelled. In order to institute a proper examination, an intimate practical knowledge of the normal anatomy of the ovum, and a familiarity with its outward appearance, on the part of the observer, are absolutely essential.

From a variety of circumstances, the substances expelled are frequently difficult of recognition; it is a good plan to place them in water for twenty-four hours, or even longer, at the end of which time they will be in a much more satisfactory state for examination. The importance of adopting this precaution in the examination in cases of suspected abortion it is impossible to over-estimate.

1. *An Early Ovum.*—If any portion of the body or members of the fœtus be found in the mass expelled, there can, of course, be no doubt in the matter; we have to do with an abortion. When no part or parts of an embryo are to be found, we proceed to search for one of the following structures: the decidua materna, or external envelope of the ovum; the decidua reflexa, internal; the chorionic villi; the umbilical cord, etc.

Moles.—An ovum, or some part of it, may remain in the uterus for a very considerable time, growing in an irregular abnormal manner, or just preserving a low form of vitality,

The "fleshy mole," as it is termed, consists of an ovum between the membranes of which blood has been effused. The blood effused has coagulated, and the result is a mass the parts of which are glued together and separated with difficulty. Organized membranes and chorion villi distinguish the "fleshy mole" from simple clots of blood, and from other substances presently to be more particularly considered. It must be recollected that the chorion villi do not become developed so as to constitute a placenta until near the fourth month of gestation.

There is another kind of true mole, the "hydatidiform" or vesicular mole, a description of which will be given presently.

2. *The Placenta.*—The size, shape, etc., of the mass, and the umbilical cord, would externally indicate it to be the placenta. The expulsion of a retained placenta is, at least when the retention has existed for some time, usually preceded by an offensive discharge; but the placenta has occasionally been discharged apparently fresh, and without signs of decomposition. In cases of abortion at the fourth or fifth month, the placenta may be retained for some time, its removal not having, for some reason or other, been effected at first. Cases are on record which show that the placenta may be retained within the uterus after abortion for months and even years. An instance in point is quoted by Montgomery from Morgagni.* More than one case of the kind has come under my own observation. Meanwhile, its presence in the uterus has generally occasioned severe hæmorrhages. An early placenta would be about the size of a pigeon's egg; later it would be larger.

3 and 4. *Fibrous polypi* of the uterus and *fibroid tumors* are sometimes expelled spontaneously from the uterus. Externally, these bodies might be easily confounded with a placenta, the more especially as the preceding hæmorrhages might be considered evidence of abortion having occurred. Polypus of the uterus and fibroid tumors frequently produce abortion; and in certain cases abortion may occur in the first place, and the expulsion of the polypus which gave rise to the abortion in the second. This happened, as I had reason to know, in a case under the care of a gentleman in the country; and the polypus which came away was considered, until after it had been more carefully examined, to

* *Op. cit.*, p. 259.

be the placenta. The structure of a polypus or of a fibrous tumor differs widely from that of the placenta, the former presenting a fibrous texture, generally dense, and sometimes very firm; but now and then, in the case of a polypus, more spongy and loose. The insertion of the umbilical cord would be, of course, wanting. Fibrous masses containing fatty matter within them, which I believe are instances of *fatty degeneration* of fibrous tumors or polypi of the uterus, are sometimes spontaneously expelled, as in a

FIG. 147.



case which I have placed on record,* or solidified by *calcareous matter*. Generally, we find a previous history of "frequent and severe hæmorrhages" when these uterine outgrowths have been expelled. The spontaneous expulsion here alluded to is not a frequent termination of their history. Masses of cancerous growths, in some rare instances slough away and appear externally. The cancerous disease is usually far advanced in such cases, and a digital examination would reveal the origin of the expelled body.

5. *Coagula of Blood* (blood-polypi).—Coagula may form

* "Trans. of Path. Society," vol. xi., p. 173.

between the uterus and the vagina. The polypus, as a rule, very tolerant of the pressure of the hand, and they do not generally become firm and dense. They are sometimes attached to the uterus from the second month. The remains of the blood-clot, the whole assumed when the coagula are tolerably organized bodies are not uncommon. When polypi of the uterus come away having a circular shape. The polypus at the same time prevents the escape of the blood, and thus the coagula are thus formed. Coagula are tolerably firm, dense, grayish, and are sometimes organized.

The want of organization in the corpuscles, would assist in the formation of the substance. The centre of the clot exhibits a clot of a darker color, which was the original nucleus of the clot.

The shape of clots of blood expelled from the uterus are sometimes noticed. I have observed under my observation—that of a large clot of blood, having a circular shape, had been occasionally expelled, and pain, at the menstrual period, the aperture of the hymen was the discharge of blood being more accumulation and coagulation of blood occurred.

Bodies more or less resembling the polypus considered together under this name. The substances in question may be found in the vagina or in the uterus.

Krankhaften Geschwülste," Band., i. p. 146.
The polypus reported on by myself in "Trans.

1. *Exfoliations from the Vagina*.—Under certain circumstances the lining membrane of the vagina separates in the form of thin translucent flakes, which sometimes come away in great quantities. The flakes in question are composed of the scaly epithelium of the vagina, and under the microscope exhibit the well-known appearances of this form of epithelium. It is necessary to place them in water in order to render obvious the characters of these exfoliated products.

2. *The Dysmenorrhœal Membrane* ("menstrual decidua"—Farre).—This is an exfoliation of the lining membrane of the uterus—a sort of skin occasionally expelled from the uterus, independently of conception, after a catamenial period, and exhibiting a certain degree of resemblance to the decidua lining the uterus during pregnancy. The membrane is the mucous membrane of the uterine cavity, hypertrophied and cast off (see chapter on Menstruation, p. 49). Under the influence of certain conditions, the nature of which is at present not perfectly understood, but which probably have the effect of setting up a sort of chronic inflammation of the lining membrane of the uterus, its mucous membrane becomes sometimes greatly more thickened than usual, and being, in accordance with the ordinary rule, thrown off, it is presented externally. This is what appears to take place in these cases of membranous dysmenorrhœa. The membrane in question is smooth internally, rough and slightly flocculent externally. When thrown off in a single piece, the membrane presents three apertures, corresponding to the apertures communicating with the uterine cavity, and is of a pyramidal shape. It is expelled during the catamenial flow, which, as a rule, is more profuse than usual. It is unlike the vaginal exfoliations just alluded to, being very much thicker. The distinction of this dysmenorrhœal membrane from the decidua of an early ovum might, under certain circumstances, be difficult, as already stated, viz., when the supposed decidua is unaccompanied by any part of the chorionic structure. The concomitant circumstances will assist in the diagnosis; thus the "dysmenorrhœal membrane" is not expelled at one catamenial period only, but on successive occasions; whereas, in the case of an abortion, the same thing is not likely to occur, or, at all events, with the same marked periodicity (see chapter on Dysmenorrhœa).

3. *The Covering of the Early Ovum*.—Portions of the de-

cidua materna, the decidua reflexa, the chorionic sac, etc., may come away in the form of membranous substances.

4. *Exfoliations from the Bladder*.—The coats of the bladder have in rare instances been expelled; in cases related by Mr. Spencer Wells and others the whole lining of the bladder appears to have sloughed and to have come away by the urethra.

VESICULAR BODIES.—*The Hydatidiform or Vesicular Mole*.—Little bladder-like substances, singly, or connected in series like beads, may be expelled from the uterus. These

FIG. 148.*



bodies were formerly considered to be hydatids formed in the uterus. They really result from certain alterations of the chorion villi, and they are always the result of conception. The embryo perishes at an early period, and the chorion villi continuing connected with the uterus maintain a slow growth, the *development* being arrested. The vesicular bodies are thus the result of dropsical swelling of the chorion villi. It appears that the period of pregnancy during which the chorion villi may take on this peculiar form of degenerative growth is limited, probably not later

* The drawing is a magnified representation of an early stage of the hydatidiform degeneration of the ovum, and exhibits very accurately the relations of the vesicular bodies, *b*, to the chorionic membrane, *a*, and the decidua serotina, *c*. (For further illustrations, see my papers in "Obst. Trans.," vols. i. and ii.)

than the middle or end of the third month. If the embryo perish after the chorion villi have become pretty intimately connected with the decidua serotina, but before the placenta has become formed, while the villi are allowed still to retain a certain degree of connection with the uterus, they may continue to grow; but *development* is arrested, and the bladder-like bodies are the result; such, at least, is my explanation of the formation of these bodies. Some eminent authorities consider it a disease of the villi *ab initio*.

With the presence of the vesicular mole watery discharges are occasionally associated. The mole in question may attain a considerable size, and may remain several months in the uterus, a few of the vesicles from time to time breaking and discharging fluid from the os uteri. The mass may come away altogether, or clusters of the vesicles may be expelled at intervals.

True hydatids may in very rare instances be expelled from the generative passages. They originate in the abdomen, bursting into this cavity from the liver; and they may penetrate through the uterus or into the vagina. True hydatids are closed sacs one within another; while the vesicular bodies resulting from chorionic transformation are arranged in a series like beads on a string, with slender peduncles or intervening connecting portions. The well-known "hooklets" are usually found when the cysts are really of hydatid origin. I have met with a case in which, death having occurred, several hydatid cysts were found in the abdomen, the pelvis, etc., and, had life been prolonged, some of these might have burst into the vagina or uterus. In the case in question, the patient was a young unmarried woman. I have also met with one case of true hydatids of the uterus, in which the organ contained bodies of undoubtedly hydatid character.*

FACTITIOUS BODIES.—Lastly, the observer must be cautioned as to the occurrence of cases in which, for a variety of reasons, women exhibit substances which they are desirous of leading the practitioner to believe have been expelled from the vagina. The careful examination of the bodies in question is, or should be, sufficient always to enable us to detect the fraud.

* "Obst. Trans.," vol. xii., p. 237.

GENERAL TREATMENT.

If the blood be impoverished, the patient must be strengthened, the general health improved by careful hygienic measures, by good food, pure air, exercise, etc. Any special predisposing cause, the detection of which may require very careful scrutiny of the habits and previous history of the patient, must be removed. If, for instance, the patient be living in a malarious neighborhood, the residence must be changed. In cases where there is great torpidity of the system, congestion of the abdominal viscera, a loaded state of the bowels, and unhealthy state of the secretions generally, what may be termed a derivative plan of treatment, consisting in administration of brisk purgatives and such medicines as are known to excite action of the liver and chylopoietic organs generally is effective. In cases of great debility iron is necessary. A mixture containing very small doses of sulphate of magnesia, with a little dilute sulphuric acid and syrup, is exceedingly useful during the days of the profuse catamenial flow.

In cases due chiefly to general debility, from whatever cause, tonics and purgatives must be given together. For such, a colocynth and rhubarb pill twice a week, with iron and sulphate of magnesia in small doses, two or three times a day, may be recommended. To promote the action of the skin, to insure regular action of the bowels, and to improve in every possible way the general health of the patient, is to do pretty nearly all that can be done in the general treatment of ordinary cases of profuse menstruation not dependent on some physical derangement of the uterus.

The general treatment is particularly important in cases of women who have resided in tropical climates, such as India. The uterus and pelvic organs generally are found in such cases in a state of chronic congestion, there is profuse menstruation, together with leucorrhœa, and not seldom flexions are present. The flexion, of course, requires special treatment, but the general condition of the patient requires in such cases careful management. The only means of successfully dealing with these cases is to carefully supervise the performance of the functions generally, and especially those of menstruation, fecundation, etc., and to remove, by appropriate treatment, the diseased condition of the uterus, which is the cause of the symptoms,

When the circumstances of the patient admit of it, and the case is an obstinate one, great advantage will be derived from residence at a watering-place, where, for a variety of reasons, hygienic measures are better enforced and more easily carried out than at home. The remedies considered necessary, aperients, tonics, etc., are more efficacious also when administered in the form of mineral water. In selecting the spa, regard must therefore be had to the peculiar condition of the patient, and the cause of the menorrhagia (see Treatment of Chronic Congestion of the Uterus).

The daily use of the sponge bath is strongly to be recommended, the skin being well rubbed by a rough towel for some minutes afterward. The Turkish bath may be used in the treatment of certain cases of menorrhagia, in which there is defective activity of the skin, and in which sufficient bodily exercise cannot, for some reason or other, be taken. Experience has taught me that cold hip-baths are not usually to be recommended as a remedy for menorrhagia, although I was formerly inclined to consider them serviceable. Where hip-baths are employed the water used should be either warm or tepid.

In all cases where the uterus and pelvic organs are in a congested condition, the use of the vaginal douche is of most valuable assistance in the treatment. The means of applying this remedy will be found described in the chapter on Leucorrhœa.

It is of extreme importance to regulate the conduct of the patient at the menstrual periods. For two or more days previous to the expected period, and during the time at which the discharge is going on, the patient must be directed to remain as quiet as possible, and chiefly in the recumbent posture. The clothing must be light, the room should be cool. The bowels must be kept regularly open, and stimulant articles of food, as well as excessive eating and drinking, must be avoided. Sexual intercourse is to be prohibited. By adopting these simple precautions, much will be effected in diminishing the amount of the discharge.

Dr. John Chapman has introduced a method of treatment which has in some cases proved of service in cases under my own observation, viz., the application of cold to the spine by means of ice-bags. The cold acts directly on the spinal cord and indirectly on the uterus, leading probably to a contraction of the whole organ, and thus lessening the hæmorrhagic discharge.

In some few cases the loss of blood has been, or continues to be, so profuse that it is necessary to arrest it in a more summary manner; the patient has become so reduced that a further loss of blood is likely to be attended with grave consequences. For the treatment of this form of profuse menstruation, the general preventive means hitherto spoken of are most important; but something more is needed. In extreme cases it is necessary to arrest the further flow of blood in a mechanical manner—*i.e.*, by plugging the vagina. This will be best effected by inserting, by means of the Sims speculum, a piece of lint dipped in infusion of matico or tincture of sesquichloride of iron, or, which is still better, a saturated solution of perchloride of iron in glycerine, and one or two yards of wetted bandage, carefully packed in the vagina. This form of plug is very easily managed, as it admits of a portion, or the whole, of it being easily withdrawn. The bandage should be previously wetted by being squeezed out of cold water. Dr. Henry Bennet strongly recommends the plugging of the cervix uteri itself in order to restrain the hæmorrhage when very profuse. The patient must be directed to remain in the recumbent posture; cloths dipped in cold water should be laid over the pelvic region and removed and reapplied from time to time; or a cold wet napkin may be flapped upon the abdomen, so as to produce a sudden shock. Injection of cold or iced water into the rectum is also a most valuable means of arresting the flow of blood in bad cases of this kind. The object is to produce contraction of the uterus, for that organ is relaxed, congested, and in a condition very much resembling that which is present after labor.

The internal remedies to be made use of are, firstly, those which are known to induce contraction of the uterus; secondly, those which are known to have the power of arresting hæmorrhage—styptics, as they are termed. Ergot of rye and ipecacuanha have been found serviceable in cases of *post-partum* hæmorrhage; and they are applicable in the treatment of the severer forms of profuse menstruation also. I have myself had great success with the ergot, when all other remedies had markedly failed. A decoction of the fresh powder should be taken three times a day. Styptics are frequently found very serviceable; of these matico in combination with tincture of iron, or the latter alone in large doses (thirty to forty minims), are strongly recom-

mended. Matico has proved exceedingly efficacious in some few cases in which I have employed it. Gallic acid and diacetate of lead may be also employed. Opium is a remedy which has been highly extolled in cases of profuse menstruation, as also in hæmorrhages generally, but it does not appear to be adapted for chronic cases. Attention has been directed to digitalis administered internally as of peculiar efficacy in the treatment of profuse menstruation, but the results obtained in cases where I have tried it have not been altogether encouraging. In passive menorrhagia, Beau recommends rue and savin, in doses of rather less than one grain each.

In severe cases of profuse hæmorrhage, while measures are being taken to arrest the discharge of blood and to prevent further hæmorrhage, it is necessary to support the patient by administering stimulants and nourishment internally. The requirements in individual cases vary according to the urgency of the symptoms. Brandy and beef-tea or strong soup must be given frequently, but in small quantities at a time. It is possible to conceive a case—indeed, such are on record—in which transfusion may be necessary, and where the patient's life may be prolonged, if not saved, by timely recourse to this procedure.

It does not very often happen that a patient perishes from hæmorrhage due to simple profuse menstruation, but there are many cases where life, if not abruptly cut short, is materially abbreviated by the long-continued weakness and prostration thereby induced.

LOCAL TREATMENT.

The treatment is palliative or curative, one or both, according to circumstances. The case may or may not admit of absolute cure. When not curable, much may often be done to diminish the loss of blood at the menstrual periods by giving the patient directions as to her conduct during the time in question. Thus, in cases of cancer, of fibrous tumor, of flexion, etc., where it may not be proper, for a variety of reasons, to resort to more radical measures, rest, the horizontal position, careful diet, and the application of this system of treatment at and during each successive menstrual period, will do much to lessen the amount of the loss of blood. It is in these cases also that we occasionally find it necessary to apply measures for at once arresting

the discharge of blood, and which have been already pointed out. The discharge of blood may, under such circumstances, be such as to amount to a regular hæmorrhage, and must be treated as such; but, whatever its cause, the amount of discharge may be always very considerably reduced by the preventive and palliative measures which have been already alluded to.

With reference to the *curative* treatment of these cases of unusual discharge of blood from the uterus, and which are connected with the presence of organic or other disease, or in those very numerous cases in which flexions are responsible for the hæmorrhage, etc., we must be guided by the circumstances of the case. The proper radical treatment of the various pathological conditions of the uterus, etc., are elsewhere discussed under their proper heads. At present, some general observations will be made in reference to the treatment of these cases, so far as the hæmorrhage is concerned.

The loss of blood produced by organic or other disease of the uterus is often such as to necessitate the absolute removal of the cause of the discharge in order to save the patient's life. This is more particularly the case where polypus of the uterus is present. A minute mucous polypus growing just within the os uteri has been known to give rise to severe hæmorrhage; a pedunculated growth of this kind may occasion more hæmorrhage than a polypus of considerable size; and hence operations are demanded in order to restrain the hæmorrhage, with varying degrees of urgency in different cases. Hæmorrhage is not generally the only reason for deciding on operative or other measures for their removal.

In some cases our decision as to treatment will be affected by this consideration. The patient may be fast approaching the end of menstrual life, and it may be expected that the hæmorrhage, with the profuse menstruation, will disappear at the end of a short period. Such a view of the case may present itself to us where there are fibrous tumors in the uterine wall, projecting, perhaps, into the cavity of the uterus, and giving rise to the symptoms now under discussion. In many such cases, symptoms which, during menstrual life, are of great severity grow less, and the patient finds the inconveniences for the most part vanish with the arrival of the last menstruation.

The severe hæmorrhages produced by fibroid tumors not

seldom appear to depend to a great extent on obstruction to escape of blood from the uterus. Hence the operation of incising freely the cervix uteri is serviceable in certain cases.

In cases where there is reason to believe that abortion has, or may have, recently occurred, the first thing to be done is to ascertain whether any portion of the ovum or of its membranes remains in the uterus, and if so to remove it. Experience has shown that the retention within the uterus of a very small portion of membrane is sufficient to give rise to considerable and continued loss of blood. Where the os uteri is so closed that the finger cannot be easily introduced, it must be slowly and carefully dilated. The best method of dilating the os uteri for this and other purposes will be particularly described in the chapter on Dysmenorrhœa. The consideration of the treatment appropriate in such cases, however, falls more properly within the province of midwifery. It is sufficient here to insist on the necessity for completely emptying the uterus to check the hæmorrhage proceeding from this cause.

Of late years the practice of applying strong caustics to the interior of the uterus has been rather extensively followed. Applications were at first limited to the tincture of iodine, but undiluted nitric acid has been frequently used for the purpose. Again, it has been recommended that the interior of the uterus should be scraped by means of an instrument for the purpose—a curette—the object in both methods of treatment being to burn away the surface of the uterine lining, or to remove it. These methods of treatment have always appeared to me unnecessary, and it has been shown by reports of cases which have been published that occlusion of the os uteri and destruction of the normal uterine functions have followed these procedures in some cases.

In regard to the injurious effects of the scraping process Dr. Emmet says that he has known peritonitis, cellulitis, pelvic abscess, and even death occur on removing growths from the interior of the uterus by means of the curette, and he approves of Dr. Thomas's blunt copper-wire curette, which compresses the lining without removing it.

In regard to the injurious effects of the cauterizing process, Dr. Wiglesworth * recorded a case in which occlusion

* "Obst. Journ.," vol. lxx., p. 622.

of the os, and suppression of menstruation occurred as a result of application of fuming nitric acid to the whole interior of the uterus, and he forcibly directs attention to the sterility necessarily so produced. In another paper he records two more cases in which the same result occurred. Dr. Playfair* considers that Dr. Wigglesworth's case teaches necessity for caution in the use of nitric acid. He prefers carbolic acid in a tolerably concentrated form. Dr. Edis, writing on the same subject, states that in two cases he had observed somewhat similar results to those above related.

As supporting the views above given as to the true explanation of these cases may be cited a paper by Dr. G. H. Lyman.† He advocates the dilatation of the cervix uteri for the cure of uterine hæmorrhage. In four cases dilatation was performed for the purposes of diagnosis, and so marked was the relief from the hæmorrhage that his attention was aroused to dilatation as a means for arresting the hæmorrhage. Dr. Lyman considers that it acts by relieving the constriction at the internal os, and thus relieves the congestion of the tissues above that point.

For Dr. Thomas's opinion on the subject see chapter on Leucorrhœa.

The so-called fungosities which are supposed to be removed by the procedures above mentioned appear to be merely the unduly vascular mucous membrane. It is more rational to endeavor to reduce this vascularity than to destroy the membrane. As to the efficaciousness of this cauterizing method of treatment it does not appear that the results are very encouraging, the operation requiring, according to Dr. Thomas (see his last edition), frequent repetition before a cure can be effected.

When cauterizing applications are made to the interior of the uterus it is necessary, in the first place, to dilate the cervical canal. If strong nitric acid be applied, an ebonite cervical speculum, as devised by Dr. Atthill, is required, through which the probe carrying the acid can be introduced. It has been found to be dangerous to inject caustic fluids into the uterus without previous free dilatation of the cervical canal; hence, if tincture of iodine or other such

* "Obst. Journ.," vol. lxi., p. 694.

† "Transactions of American Gynæcological Association," in "Amer. Journ. of Obst.," vol. x., p. 526.

fluid be so employed, the previous cervical dilatation is imperative.

The general conclusion to be drawn from the facts which have been collected on the subject is that intra-uterine medication for the relief of hæmorrhage is so far good that it implies an opening, or indeed a dilatation, and certainly a straightening of the uterine canal. One effect it certainly has, though it does not seem to have been contemplated by those who have practiced it (with the exception of Dr. Lyman), viz., that it promotes the "drainage" of the uterine cavity. I have always considered this latter indication as a most important one, and the practical inference is that the dilatation or straightening of this canal will be found to be all that is required in the majority of cases.

A final word must be added in reference to the efficacy of removal of the ovaries, by the operation now known as Battey's operation, for the cure of menorrhagia. Cases do occasionally present themselves in which the tendency to hæmorrhage is so great from fibroid growths in the uterus, and possibly in some other cases, that this operation seems justifiable. (See further remarks on subject of this operation in chapter on Ovariectomy.)

CHAPTER XXXIV.

DYSMENORRHOEA.

Meaning of the Term—PATHOLOGY—Essentially a Symptom indicative of Obstruction to Escape of Menstrual Fluid—Seat of the Obstruction, mostly at the Internal Os Uteri—*Modus Operandi* of Obstruction at this Position—Severity and Intensity of the Pain—Nausea and Vomiting accompanying Dysmenorrhœa—Causes of Obstruction at various parts of the Canal of the Uterus enumerated—Inter-menstrual Dysmenorrhœa—Membranous Dysmenorrhœa.

Pain during Menstruation due to other Causes than Obstruction to Escape of Menstrual Fluid—Disordered Ovulation—Rheumatic Diathesis—Neuralgia.

TREATMENT.—General Remarks—Rectification of Shape of Uterus—Dilatation—Incision of Canal—These Methods Compared—Their Applicability to the various Cases pointed out—Postural Treatment—Palliative Treatment—Internal Mechanical Treatment—Treatment of Imperforate Os Uteri—Treatment of Membranous Dysmenorrhœa.

The term "dysmenorrhœa" has been long employed to denote the presence of pain or difficulty, one or both, at-

tendant on the performance of the function of menstruation.

Hardly two patients suffer alike during menstruation; and we see a regular gradation between cases in which there is very slight suffering, and others in which the agony is such as to be almost unendurable. The pain also varies in its position, but it is for the most part referable to the uterus; and, in the cases where there is most pain, it is generally identical in position with that of this organ. Pains of various degrees of intensity may be felt at other parts of the body; but they are added, so to speak, to the other—the essential pain—which is situated in or about the pelvic region.

What is the relation of the pain to the flow of the menstrual fluid? This, being the vital point of the whole question, demands our earnest attention.

We find in practice several variations in respect to the manner in which these two things, the pain and the flow of the fluid, are related one to the other. In some cases it will be found that the menstrual fluid escapes from the uterus from the first; the patient having little, but only a little, to complain of during the whole menstrual period, while in other cases, on the contrary, the appearance of the menstrual fluid is delayed for a certain time, and in the meanwhile the patient suffers more or less severely from pain; the discharge appears, and the pain thereupon quite or almost completely ceases. In other instances the pain is present intermittingly more or less during the whole of the period.

PATHOLOGY.

Dysmenorrhœa is to be regarded as a symptom indicating, in almost every instance, an impediment to the escape of the menstrual fluid from the uterus, and this view of the subject, which was put forward in the first edition of this work (1863), has received very general (though not unanimous) adoption by several other writers, although quite recently attempts have been made to revive in a modified shape the older views entertained on the subject. Before the existence of flexions of the uterus was recognized, the sole "obstructive" cases of dysmenorrhœa were those in which the external os uteri was found small and narrow. But the "obstructive" cases, it can now be shown, are much more numerous, and they include very many instances

where the *internal* os uteri is the seat of obstruction to the escape of the menstrual fluid.

Pain during the menstrual period is not exclusively due to obstruction to escape of menstrual fluid; for there are cases in which the source of the discomfort is to be sought elsewhere. But the "obstructive" theory applies widely and generally to most cases, those not coming within it constituting the exceptions.

There has been considerable dispute as to the *seat of the obstruction* in cases of dysmenorrhœa. On the one hand, the *external* os uteri is still held by some authorities (Dr. Barnes, for instance) to be the almost exclusive seat of obstruction; on the other hand, the *internal* os uteri is held by other and numerous authorities to be the point where the obstruction occurs.*

Opinions so widely differing and held by equally eminent authorities may seem difficult to reconcile. The point is certainly of the greatest practical importance. The circumstance that in many cases of dysmenorrhœa the internal os allows a tolerable-sized sound to pass through it, has been held by some eminent practitioners (Dr. Bennet, Dr. Tilt, and others) to prove that there is no stricture at this point. But the stricture may nevertheless virtually exist at the internal os, in consequence of flexion of the canal, the flexion acting as an obstacle to menstruation, but not preventing the passage of the sound. When the uterus, as is often the case under such circumstances, is unduly soft, the sound may open out the flexion as it passes in. Here lies one source, at least, of the apparent discrepancy. The least bending of the uterus at the internal os will thus cause obstruction. I agree with Dr. Marion Sims, Dr. Savage, Dr. Greenhalgh, and others, in regarding the internal os as by far the most common seat of obstruction. The cause of such obstruction at the internal os is, according to my experience, almost invariably a flexion of the uterus. Other causes may give rise to obstruction, but the percentage of such cases is small. The curve described by the uterus in cases of flexion is, it must be remembered, not always the

* Many of the various arguments and statements put forward by those who have in public discussed this subject will be found in vols. vii. and viii. of the "Obstetrical Transactions," in the reports of the discussions on the subject at the meetings of the Obstetrical Society of London. See also a paper in the "Obstetrical Transactions," by Dr. Barnes (vol. xiv., p. 108), on the "Essential Cause of Dysmenorrhœa."

same. The flexion may be seated *below* the internal os, at the middle of the cervix, in fact; here the obstruction is not seated, of course, precisely at the internal os, but at a point below that. These latter cases are for the most part those described as "conical" cervix, and they are not unfrequently associated with dysmenorrhœa. But I do not think they occur so frequently as Dr. Barnes believes.

The essential part of menstruation, so far as the uterus is concerned, appears to be growth, thickening, and increase of vascularity in the mucous membrane lining the body of the uterus; the tissue of the uterus itself being also congested, and the venous plexuses situated around this organ being at this time filled and gorged with blood. The menstrual blood is poured out by the mucous membrane of the body of the uterus. At the point where the cavity of the body of the uterus and the cervical canal join, the canal is narrow; so narrow, indeed, that in women who have not borne children it usually admits easily only an instrument having a diameter of an eighth to a quarter of an inch. Hence it follows that, in a by no means insignificant proportion of cases, the internal os uteri, as it is termed, is so narrow that very little is needed to close it altogether, or at all events to so close it that the escape of fluid from the uterine cavity is rendered difficult. Moreover, during the menstrual period, fluid containing minute shreds of broken-down membrane has to be discharged from the cavity of the body of the uterus. The internal os is the central and smallest part of the uterine canal. It is surrounded by the firm, resisting, fibro-muscular tissues of the uterus, the uterine walls being at that situation, as already remarked, rather thinner than elsewhere. In the ordinary course of things, the menstrual products pass through this narrow canal slowly, but continuously, the size of the passage being sufficient to drain the uterine cavity and discharge the fluid as fast as it is poured out from the lining of the body of the uterus.

The patency of a tube is greatest when it is completely circular in shape. Flatten the tube, and at once its calibre is diminished. Carry the flattening process far enough, and we extinguish the tube altogether. It so happens that the internal os uteri—the narrowest part of the tube—is coincident with the middle of the uterus, the situation at which, in cases of flexion-distortion, the bend is most usually found to occur. The physical relations of the parts are

such that a certain flattening of the canal is inevitable when the uterus is bent at this situation. The flattening occurs

FIG. 149.



FIG. 150.



from before backward. It varies in degree, according to the degree of the flexion and other circumstances, and it is

demonstrable, from anatomical considerations alone, that flattening and consequent impairment of the patency of the canal must inevitably occur when the uterus is decidedly flexed, and thus distorted. This is so obviously true that it seems almost unnecessary to insist upon it. In Figs. 149 and 150, representing respectively ante flexion and retro flexion, the manner in which the uterine tube becomes compressed is rendered evident.

But we may go a step further. It is probable that during menstruation the internal os uteri is capable of becoming to a certain extent dilated so as to more readily allow of the escape of menstrual products. It is believed by some that the internal os uteri has a regular sphincteric action, expanding and contracting according to circumstances. It seems probable that in a state of perfect health no such expansion is required to allow of escape of menstrual products; but it is quite certain that such expansion is required if the menstrual *débris* be unnaturally solid or bulky; and it is quite possible that the internal os does undergo expansion to a certain extent, even in less abnormal cases. But I would direct attention to the fact that, if the uterus be decidedly bent, such expansion of the internal os must be very materially interfered with. The tissues around the internal os are necessarily compressed and rendered harder and more resisting by the mere fact of the existence of the bend. The flexion occasions not merely a flattening of the canal, but a condensation of the uterine tissues in the neighborhood, such as would directly and forcibly resist any expansion and dilatation of the tube. The patency of the uterine tube, under ordinary circumstances, is, in short, dependent on the uterus preserving its proper form, and thus allowing the canal to remain circular in shape.

Stricture of the internal os uteri has been very frequently assumed to be present when the canal was simply very much bent at that point. The condensation and hardening around the narrow portion is undoubtedly often great in long-standing cases, and a veritable stricture not seldom exists. But at first it is not so, the canal admitting of easy passage of the sound if the point be only directed properly and in conformity to the bend of the uterus. All cases of dysmenorrhœa are not due to flexion, but the vast majority of them come under this category: marked dysmenorrhœa will, unless in a very few and exceptional cases, be found associated with undoubted flexion of the uterus.

In a very interesting paper Dr. Herman* records observations on 111 patients "under treatment for local contagious disorders," his object being to determine whether painful menstruation is more common in women who have acute flexions of the uterus than in others. He found that of

43 cases where the uterus was straight	12	had much or bad pain	} 29 per ct.
14 cases of slight ante flexion	5	" "	
30 cases flexion a right angle	9	" "	} 30 per ct.
23 cases flexion an acute angle	7	" "	

—thus proving, as Dr. Herman considers, that the degree of bending has little influence on the severity of the pain.

Objections to the validity of these conclusions obviously suggest themselves. One principal objection to my mind is that no distinction is made as to the softness or hardness of the uterus, in the above cases. This would affect the question materially. If the uterus were very soft, an acute flexion might not necessarily produce pain during menstruation, for the uterine congestion then might straighten it. I have known this to occur. Again, flexion might be present during menstruation and not at other times, and would thus escape notice. Further, the degree of hardness is important, inasmuch as an acutely flexed uterus which had become hard would be more likely to occasion severe dysmenorrhœa. One most important reason for contesting the validity of the conclusions drawn by Dr. Herman from his cases is that, having particularly devoted attention to the effect of treatment of uterine flexions on the dysmenorrhœa so often associated with them, I am unable to recall to mind a case in which the dysmenorrhœa was not markedly relieved if not completely cured by measures directed to the straightening of the uterine canal. In cases of ante flexion causing dysmenorrhœa, I have used the cradle pessary with unquestionable benefit for many years past.

Here may be mentioned also a paper by Dr. Godson† "On Spasmodic Dysmenorrhœa associated with Sterility," in which he proposes to drop the term "obstructive," as he knows no evidence to prove that there is a want of patency of the cervical canal. But Dr. Godson treats his cases nevertheless by dilating bougies, whereby it would seem to be implied that something of the nature of an obstruction

* "Obst. Trans.," vol. xxiii., p. 217. † Ibid., vol. xxiii.

exists at that part of the canal subjected to the dilatation. Dilatation so employed is synonymous with straightening, and it is indeed a very efficacious means of straightening the uterine canal. Spasmodic action of the fibres surrounding the internal os might give pain, but it would also possibly occasion obstruction to escape of menstrual fluid, and thereby set up spasmodic action of the *whole of the fundus*. Supposing that we start, therefore, from the hypothesis of cervical spasm as a cause of dysmenorrhœa, we appear to be conducted to the "retention" view. It has been asserted that the sound can be easily passed into the uterus during the menstrual flow, and while the patient is suffering, but this by no means proves absence of obstruction to escape of fluid or menstrual *débris*, for the uterus may be so much flexed as to create obstruction, while the sound may be made to enter, *straightening the canal in its passage*.

Why, it may be asked, do we find that many cases of dysmenorrhœa are relieved by simple observance of the recumbent position during the period? Simply because the existing flexion is thereby somewhat diminished, the canal is a little straightened, and the escape of the uterine contents is thus rendered more easy. The pain which accompanies difficult menstruation is due to *the existence of an impediment to the escape of the fluid*. The pain appears to be partly due to the distension of the uterine cavity, causing compression and tension, and congestion of the body of the uterus, but chiefly to actual muscular contraction of the uterus; in fact, to a "pain" similar to those witnessed in parturition, though on a smaller scale. The body of the uterus contracts, and in the end generally succeeds in expelling its contents. In so doing, the internal os uteri must become dilated, in order to allow of the passage of fluid or the *débris* of membranes or clots. In cases of flexion, when the malady is not of very long duration, the contraction of the uterus seems to have a straightening effect on the uterus, and when this occurs the canal is thereby opened to a certain extent, and the uterine contents escape. But in severe or long-standing cases the circumstances are such that the uterus has no power of straightening itself, and then we find that the process of emptying the uterus is a very slow one; the pains recur from time to time with little relief, and the catamenial period is both contracted and painful. In cases of the latter description, a frequent phenomenon is the abrupt cessation of the flow for a certain time—a few hours or longer

—after which the pain and discharge again recur. A further phenomenon, traceable to the same cause, is a certain dilatoriness in the appearance of the discharge. The fluid observed at first is very slight in amount, or there may be none at all for the first day or two, during which time, however, pains are more or less frequent; also a protraction of the period, together with alteration in the character of the discharge from red to brown, and later on to a still lighter discharge, evidencing that the retained contents of the uterus are now mixed with a fluid of a non-sanguinolent character.

In an extremely able article "On the Polar Divergence of the original Natural Forces in the Womb at the time of Pregnancy, and their Mutual Exchange at the time of Labor as a Contribution to the Physiology of Pregnancy and Labor," Dr. Champneys* has recently revived a doctrine enunciated by Reil in the "*Archiv. für Phys.*," 1807.

The substance of Reil's argument is that in the unimpregnated uterus the forces stand in equipoise. When impregnation occurs the expansive force obtains the advantage first in the fundus, from thence farther and farther through the whole substance, driving the contractile force toward the opposite pole, until this latter, driven toward the extreme point, springs over from the neck to the fundus, and at this moment gives the signal for the commencement of parturition.

"The contractile force," says Reil, "more and more pressed back from the fundus toward the opposite pole, takes refuge in the extreme point of the neck, until it is even here overcome by expansion, which mostly happens with one bound and in a moment of time, as I shall show by examples. At this moment follows the change of the poles in the magnetic line." Then follow the labor pains, during which the plus of contraction lies at the fundus and the plus of expansion at the neck. After the end of the labor the oscillations cease, contraction possesses itself again of the whole substance of the uterus. Reil adduces a case of abortion at the third month, where the cervix, which had been closed, hard, and narrow, became soft and expansible where a moment before all had been still hard and inexpandible.

Dr. Champneys proceeds to apply these doctrines of

* *Obst. Journ.*, No. 82, Jan., 1880, p. 609.

uterine polarity to the phenomena observed in dysmenorrhœa and menorrhagia. Thus, he mentions a case of menorrhagia in which, after dilatation by a series of bougies up to No. 18 size and administration of ergot, relief was obtained. "Whatever was the cause of the frequent menstruation in this case," says Dr. Champneys, "it seems that dilatation of the cervix altered the conditions and restored the natural rhythm, I believe by the operation of Reil's principle." Again, in reference to the so-called cases of "spasmodic" dysmenorrhœa, Dr. Champneys considers that these cases should not be classed under the name "obstructive." These cases are, he states, often cured by use of a bougie, "but the fact that the bougie cures them does not prove obstruction, for in many of them a large bougie meets with no impediment even during the paroxysm, and a sound as a rule passes with ease."

I have observed in my own practice cases resembling those alluded to by Reil and Champneys, in which the transition from contraction to expansion at the os uteri was observed to occur with remarkable suddenness, and in such a manner as to favor the theory of polarity enunciated by Reil. A case particularly I have in my mind, where the cervix had been under expansion by a dilator to relieve sickness at the third month of pregnancy. In this case there was a sudden transition from resistance to great expansibility observed at the os uteri.

Dr. Champneys' extension of Reil's theory to the explanation of menorrhagia and dysmenorrhœa is ingenious. Dilatation of the os uteri by tents or bougies has the effect, as I presume he would argue, of transferring contraction from the os to the fundus, or *vice versa*, of transferring relaxation from the fundus to the os uteri. Now it may very well be that this is so, but the operation in question has other effects also which have to be taken into account in explaining the results observed. Those other effects are (1) straightening of the canal, and (2) increase in the size of the canal. Either one of these effects would be likely to be followed by relief. Dr. Champneys objects to the term "obstruction" in cases where "a large bougie meets with no impediment," but there are cases in which the uterus has a retort shape, and in which the sound passes without apparent obstruction, owing, as I have already stated, to the fact that as it enters it straightens the uterus and removes for the moment the obstruction—namely, the flexion

of the uterus. So again, in cases of menorrhagia due to pouching of the uterus and retention, the use of bougies removes the "obstruction," which is not the less real because the sound apparently encounters no impediment.

It does not appear, in short, to me that it is necessary to revert to Reil's theory of polarity in order to explain the beneficial influence of dilating the cervical canal for the cure of dysmenorrhœa and menorrhagia. These beneficial effects are probably mainly connected with the production of a free and ready outlet for the discharges from the uterine cavity—free drainage in fact. Further, artificial mechanical expansion of the cervix would be likely by reflex action to excite contraction of the fundus. It is to be remarked that the necessity for the use of dilatation implies some abnormal condition of the os uteri. The question is, What is that abnormal condition? The condition is probably not always the same. In some cases there is general softness, flaccidity, and pouching of the uterus; here straightening, free outlet for escape of fluid, and the excitation of uterine contraction in the fundus, by reflex action or altered polarity (Reil and Champneys) are beneficial. In some cases, again, there is a contraction and condensation of the tissues around the internal os uteri due to flexion, perhaps of some standing, and the dilatation and straightening of the canal relieves this, accomplishing the object by actual stretching of the condensed tissues. There are two types, between which there are many varieties.

In regard to the sufficiency of the canal to allow of the passage of fluid, it must not be forgotten that the *quantity* of the fluid varies in different cases; a canal which may be a very sufficient outlet in one individual or under one set of circumstances may be inadequate in another individual and under different circumstances. There are other things to be considered also, in respect to each of which considerable variations are observed; the state of vascularity of the uterus itself; the state of vascularity or fulness of the surrounding organs.

The uterus is liable to certain morbid alterations in texture which may still more materially affect the patency of the canal of exit. Thus, within the tissue of the uterus frequently grow fibrous tumors, which may, and do occasionally, encroach on the canal, and thus constrict it. Fig. 151 represents a case of this kind. The same result may be produced by polypi growing within the uterine cavity it-

self; and occasionally we find the whole cervix uteri congenitally narrow, from an apparently defective development of this part of the generative organs. A very important class of cases is that in which the lower segment of the uterus—the cervix—has become hypertrophied, indurated, and otherwise diseased: here the canal may be contorted and twisted in such a way that the extra amount of congestion which occurs at menstruation so swells out the cer-

FIG. 151.



vical tissues as to seriously affect the patency of the canal.

These considerations are sufficient to show that we have not far to go in order to find a number of conditions capable of producing constriction of that canal by which the menstrual fluid is evacuated from the uterus. Conditions of the kind alluded to are known to be associated with severe dysmenorrhœa; and the pain in such cases is ac-

counted for by the retention, temporary or partial, which may be present under these circumstances.

Other arguments for the truth of the explanations now offered may be drawn from the facts, that, in the first place, dysmenorrhœa of the kind now under consideration is very frequently associated with sterility (see statistics on this subject at p. 221); that, in the second place, it is not observed in women who have had children, unless in connection with some recognizable and very obvious alteration in the cervix uteri of such a nature as to interfere with the patency of the canal, which is sometimes the result of the parturient process; and, in the third place, from the results obtained by mechanical treatment for improving in various ways the patency of the utero-cervical canal.

A careful study of the symptoms and phenomena observed in cases where actual obliteration of the os uteri, permanent or temporary, has been known to be present, the menstrual product having been retained within the uterus and unable to escape, throws a considerable degree of light on the question now under discussion. In the work of Bernutz and Goupil* we find collected a very large number of accurately observed cases in which the kind of menstrual retention now alluded to was unquestionably and demonstrably present; and means are thereby afforded for studying the subject analogically, so to speak. The difference between the two classes of cases—those in which there is complete menstrual retention, as in the instances just referred to—and those in which there is what may be termed incomplete or partial menstrual retention—is only one of degree.

The cases which have passed under my own observation have offered the strongest possible confirmation of the truth of the position now maintained, that in ordinary cases of dysmenorrhœa, in which there are, first, pain, and, after a variable time, appearance of a discharge, what we have before us is really *partial but temporary menstrual retention*.

Naturally, the cavity of the uterus is very small, and capable of containing but a very small quantity of fluid. Different individuals bear dilatation of the uterine cavity very

* "Clin. Méd. sur les Mal. des Femmes," tom. i. (Paris, 1860). See also the English edition of this work by Dr. Meadows, issued by the New Sydenham Society.

variously; and hence it follows that retention of menstrual fluid within the uterus may produce different degrees of pain and various degrees of suffering in different individuals.

The *severity* and *intensity* of the pain in cases of dysmenorrhœa is open, as already stated, to much variation. It is sometimes so severe that the patient rolls on the ground in agony; it is not seldom so severe that for a day or two the patient is obliged to seclude herself from society, and is confined to her bedroom. In some rare cases the reason itself is disturbed by the excruciating and intense pain which is felt.

Inter-menstrual Dysmenorrhœa.—A variety of dysmenorrhœa has been described under the term "inter-menstrual dysmenorrhœa." Cases now and then occur in which about midway between the ordinary menstrual periods there are observed attacks of pain like those at the ordinary period. And in these cases there is a considerable regularity in the onset of such attacks. Dr. Priestley read a paper on this subject at the Royal Medical and Chirurgical Society some few years ago. I have seen a few cases of this kind having the characters described by Dr. Priestley. In the cases observed by myself the attacks appeared to be associated with expulsion of a leucorrhœal fluid from the uterus, the fluid being retained in consequence of a chronic flexion. Dr. Fasbender* gives a case of severe dysmenorrhœa in which the patient, single, aged 24, had suffered for two years from this inter-menstrual pain. The uterus was sharply ante-flexed, and "endometritis" was present. The patient was entirely cured by use of an intra-uterine pessary.

Nausea and vomiting are symptoms which very frequently accompany the pain of dysmenorrhœa. This is a point which has as yet not attracted the attention it merits. Here it may suffice to say, that nausea and vomiting are by no means uncommonly observed, and sometimes with excessive severity in cases of dysmenorrhœa due to chronic flexions of the uterus.

The *causes of obstructive dysmenorrhœa* are:

Flexion of the uterus (most usually at the situation of the internal os uteri) occasioning a virtual stricture of the canal at its narrowest part. Ante- and retroflexion equally are capable of giving rise to mechanical difficulty.

* "Zeitsch. f. Geb. und Frauenk.," vol. i., No. 1.

Congenital narrowness of the cervical canal, in association with an *infantile uterus*.

Congenital narrowness of the os internum—the junction of the cervical canal with the cavity of the body of the uterus.

Congenital narrowness of the os externum uteri; not so commonly a cause of dysmenorrhœa as of sterility. Undue congestion and hypertrophy of the lining membrane of the cervix uteri, the canal being of the ordinary dimensions.

Increased flow of blood from the interior of the uterus, the canal of exit being insufficient for the ready escape of the blood.

Fibroid tumors growing in the thickness of the uterine wall, and so placed as to compress or distort the cervical canal. These tumors most commonly produce dysmenorrhœa when situated in the anterior wall, and generally occasion also some degree of flexion of the uterus, whereby the difficulty is aggravated. The most severe forms of dysmenorrhœa are witnessed among this class of cases.

Chronic congestion of the uterus itself, associated with slight degrees of flexion, or with other of the conditions above enumerated.

Small intra-uterine polypi hanging down within the cervical canal and acting as a plug, thus preventing the ready escape of the menstrual fluid.

An elongated condition of the vaginal part of the cervix, often associated with flexion of the canal at about its middle, or opposite the point of reflexion of the vagina on the cervix (see Fig. 152).

Contortion of the cervical canal dependent on an irregularly hypertrophied condition of the cervix. This is a condition not very uncommon, as the result of chronic inflammatory action in the part in question.

Membranous Dysmenorrhœa.—Under this term are included a class of cases possessing peculiar interest, in which, at each menstrual period, or very frequently so at all events, a membrane is discharged. Scanzoni held that exfoliation

FIG. 152.



of the mucous membrane occurs more frequently than is ordinarily supposed. He found portions of the mucous membrane in 14 out of 21 cases of dysmenorrhœa, when careful search was made for it. This is what we should indeed expect, if the partial exfoliation or destruction of this membrane occurs at each period under ordinary circumstances. It is, however, rare to meet with cases of exfoliation of the membrane in an entire piece, or to meet with

FIG. 153.*



pieces of any considerable thickness, and to cases of the latter class only does the term "membranous dysmenorrhœa" apply. There appears to be no doubt whatever that the membrane discharged in these cases is really the uterine mucous membrane, but whether it is an accidental thickening due to excessive growth, or to pregnancy, is not certain.

* This drawing, made for me by Mr. Tuson, represents the uterine lining expelled nine weeks after a catamenial period. There was no trace of an ovum nor evidence of attachment of one. The flocculent shaggy external aspect and the smooth velvety internal surface are well shown. The patient had had one child, and thought she was pregnant.

The expulsion of the membrane is attended usually with pain, just as happens in abortion, and this pain is of precisely the same character as in abortion, and indeed as in cases of menstrual retention just described.

In one case it was stated that the membrane was discharged usually not later than twenty-four hours from the time of the commencement of the discharge. At this time there was a stoppage of the discharge for an hour or two, the bag of membrane then coming away, its expulsion being attended with severe pain, and the discharge continuing uninterruptedly for three or more days.

In another case, that of a lady, æt. 34, who had been married for thirteen years, never pregnant, a membranous bag, complete or in shreds, had been expelled at almost every menstrual period. The body in question made its appearance always within the first few hours after the discharge had begun to flow.

In both of these cases the interval between the catamenial period was long—five weeks—and in both the membrane actually expelled belonged to, or was the product of, the former menstrual period. If, normally, the menstrual decidua is thrown off from the uterus after the discharge has ceased, or at all events during the latter period of the discharge, it would appear that in these cases this exfoliation was postponed, the membrane continuing to grow during the inter-menstrual period.

Dr. John Williams* thinks the dysmenorrhœal membrane is the decidua ordinarily shed, and that it is expelled in these cases as a whole or in masses in consequence of an excess of fibrous tissue in the wall of the uterus, the excess being due to imperfect evolution at puberty, imperfect involution after parturition or abortion, or the product of acute inflammation. The inflammation is the result of the expulsion of the masses. To effect a cure he believes that the structure of the whole of the body of the uterus must be altered.

The late Dr. Beigel,† in a paper on the subject, considered that it arises from a pathological change in the mucous membrane, which, in consequence of excessive cell proliferation, is separated from the surface and falls off in flakes. Microscopically he found the normal elements in-

* "Obst. Trans." for 1877.

† "Archiv f. Gynæk." Band ix. Heft 1 (1876).

creased in some cases, in others single elements—glands, epithelium—lost or degenerated; in some he found embryonal cellular tissue; in all cases he found round free cells formed which cause the separation. He believed that the membrane is not the result of conception.

Dr. Gautier (Geneva)* believes it to be a desquamation affecting not only the epithelial layer, but a portion also of the sub-epithelial structure analogous to that observed in certain affections of tegumentary or mucous surfaces. He likens it to ichthyosis, and suggests the term for it of "uterine ichthyosis."

Sterility appears to be very generally associated with membranous dysmenorrhœa. It appears also that while in single women the cast of the uterine cavity comes away in detached fragments, the perfect casts of the uterine cavity are only observed in married women. Hence it has been asserted by some—Haussman, for instance—that these casts are really abortions. No doubt early abortions may be mistaken for membranous menstruation, and in fact the dysmenorrhœal membrane closely resembles the thickened decidua of the first month of pregnancy. From what is known, however, it appears that the casts of the uterine cavity may appear when there has been no possibility of their being due to conception. But there may occur expulsions of a membrane due to conception alternately with a membrane not originating in this way.

It is certain that in some of the cases the uterus is in a state of chronic flexion. And it may be that the morbid condition in question is really due to chronic congestion of the lining of the uterus, kept up and perpetuated by the flexion and obstruction at the internal os thereby produced.

Disordered Ovulation.—"It is probable," says Dr. Farre,† "that when the follicle or the entire ovary becomes tense from the effusions which have been shown to have taken place ordinarily within it, and this tension is not relieved because rupture does not occur at the proper time, so that *ovulation is disappointed, or is aberrant*, the symptoms which might be expected to accompany such an interrupted process would be those which are usually set down as indicating inflammation in a part."

* "Essai de la Pathogénée de la Dysménorrhée membraneuse." (Geneva, 1878).

† "Cyc. Anat. and Phys.," article Uterus, p. 576.

I must confess that I have met with very few cases in which pain during menstruation could be traced directly to the ovaries. In many cases of ante flexion of the uterus a pretty constant pain in the region of the ovaries is frequently observed which disappears on altering the position of the uterus, showing that it is not, in such cases, located really in the ovary. It is not denied that ovaritis and pain due to ovaritis are observed; but this does not appear to be common.

In cases of *displacement of the ovary* when the organ is low down in the Douglas pouch, a condition sometimes associated with retroflexion of the uterus, the ovary is extraordinarily sensitive and painful to the touch, and dysmenorrhœa observed in such a case would no doubt be aggravated by the presence of such displacement.

General Abdominal Congestion, Derangements of Digestion, etc.—Women who are the subjects of chronic uterine disease of various kinds, and who habitually experience more or less pain in the pelvic organs, naturally suffer more at the menstrual periods. Those who have a congested, overloaded condition of the abdominal viscera, suffer more at the menstrual periods than others. A sedentary or a too luxurious mode of life rarely fails to give rise to the congestion in question. Derangement of the digestive organs to a marked extent is usually present under such circumstances.

The complication of dysmenorrhœa with nausea and vomiting has been alluded to. Hysteria is another complication. I have seen a few cases in which exceedingly intense *headache* has been observed in conjunction with dysmenorrhœa—headache so severe that the patient was lost to consciousness of everything else. A *neuralgic* habit of body constitutes a predisposition. It is generally, and as I believe correctly, supposed that the existence of the *rheumatic diathesis* predisposes to menstrual suffering. The patient afflicted with this "rheumatic" form of dysmenorrhœa is liable to migratory pains in different parts of the body, more especially in the joints; there is a loaded condition of the urine from excess of urea, lithic acid, and lithate of ammonia. Flatulence and hæmorrhoidal congestion are also usually present in such cases.

Thus, to sum up these remarks on the pathology of dysmenorrhœa:

The pain may be due to retention of menstrual fluid,

which may be either partial or complete. That is to say, there may be a slight discharge, but, the aperture of escape being insufficient, there is a partial retention; or, the patient being, for a variable time, without discharge of any kind, the case is one of complete retention.

The pain may be due to congestion of the uterus, to congestion of the ovaries, to inflammation of the Graafian follicles coincident with ovulation, or simply to neuralgia.

These two classes of cases glide insensibly one into the other. Obstruction gives rise to congestion, to inflammation, to suffering of neuralgic character; and *vice versa*, the congestion or inflammation of the uterus leads to obstruction in the manner already pointed out; but the cause of the sufferings of the patient appears in the majority of cases to be associated with partial or complete retention of menstrual fluid.

DIAGNOSIS.

The diagnosis of pains referable to the generative organs including those of dysmenorrhœal character will be considered in the Appendix.

TREATMENT OF DYSMENORRHŒA.

In treating cases of dysmenorrhœa, the object in view is not simply to relieve the actual pain, but to prevent its occurrence. The study of the pathology of the affection shows that dysmenorrhœa is a symptom only, which in the main is observed concurrently with an impediment to the escape of the menstrual secretion from the uterus. How to remove that impediment is therefore the primary object in the treatment of such cases. Our object is to render the evacuation of the menstrual products (blood and broken-down mucous membrane) free; and experience has most abundantly shown that when this evacuation is free it is also generally quite painless.

The study of the pathology of flexions of the uterus makes us acquainted with the fact that these affections are principally, though not exclusively, the cause of the impediment to the escape of the menstrual products from the uterus. To cure the flexion is generally to remove this impediment. Hence the treatment of dysmenorrhœa means in the majority of cases the treatment of flexions.

Dysmenorrhœa when slight in degree may require little

treatment, but when severe and of long standing it is hopeless to expect good results from the ordinary palliative or so-called general treatment. Years are occasionally wasted in the vain expectation of seeing an amendment, and the prospects of a life thus blighted in consequence of a rational treatment not having been taken at an earlier period.

The mechanical treatment of dysmenorrhœa, practiced in various methods, has been largely carried out of late years. At first the narrow uterine canal was incised and the canal thus increased in size. Then it was dilated. Satisfactory results followed from both these methods of treatment. The idea on which both of these methods of treatment was based was that the stricture or narrowing was analogous to that observed in other canals, *e.g.*, the urethra; and it so happened that incision and dilatation, although based on an imperfect notion of the real circumstances of the case, proved beneficial in many instances. The defect in the procedure was that the supposed stricture was not a real stricture, but an impediment created by flexion of the canal. Incidentally the treatment accomplished, for a time at least, the work really wanting to be done, *viz.*, the straightening of the canal. These observations apply to the majority of cases treated, though no doubt in some exceptional cases the uterine canal was really narrowed as well as bent, and they do not of course apply to cases (rare, however) of stricture of the os externum uteri. There has been much conflicting testimony as to the value and efficacy of the incision treatment for dysmenorrhœa, but the foregoing remarks will perhaps explain why incision or dilatation of the cervix uteri might do good and prove serviceable, and why also they might fail to prove permanently of use.

Another method of treatment—the use of uterine stems—has been also employed in the treatment of dysmenorrhœa, the action of the stem being to preserve a patency of the uterine canal, while it also maintains the uterus straight and prevents flexion.

So far as the relief of dysmenorrhœa is concerned it may be said of these various procedures:

The *incision* method procures rapidly and at once the necessary patency of the canal. But, unless followed up by other treatment, the incised surfaces generally unite not long afterward and the cicatricial tissue resulting may give rise to still further trouble. Moreover, the flexion (gener-

ally existing) recurs in spite of the incision, or may do so unless it receive attention. And it has to be mentioned that in some cases the incision treatment leaves behind it a most intractable form of neuralgia of the cervix. [This neuralgic state is never found where the operation is properly performed. It exists only in England, where the incision is always made with a *bistouré caché*, which, in the dark splits the cervix so widely open that there is eversion or ectropium of the endo-cervical structure.] As regards the cure of the dysmenorrhœa the result is generally good for a time, but the duration of the cure very uncertain. The incision treatment is nevertheless applicable in certain cases, particularly when there is a hard gristle-like condition of the internal os.

The *dilatation* treatment is more rational in design, but experience shows that to be efficacious it must be repeated frequently. Dilatation implies also straightening the canal, and the repetition of combined straightening and dilatation offers the very best means of permanently altering the shape and direction of the canal.

The use of *stems* for the relief of dysmenorrhœa is no doubt a rational and scientific procedure, the uterine canal being kept thereby straight and open; and the canal is more likely to grow permanently into a better shape than before. The drawbacks to this method of treatment are great, but in certain difficult cases it will find its proper place.

It is possible, however, in the early stages of the affection, to treat dysmenorrhœa mechanically without the use of instruments or internal mechanical appliances of any kind. When it becomes thoroughly understood how dysmenorrhœa generally originates, a comparatively simple treatment will be found, as I have found it to be in many cases, easily applicable, and very efficacious.

Postural Treatment of Dysmenorrhœa.—The postural treatment of dysmenorrhœa is founded on an appreciation of the connection between uterine flexion and the symptom in question. Means must be taken to prevent the descent of the fundus uteri. In cases of anteflexion the dorsal position is a proper one. In cases of retroflexion the prone position is best. In either case, however, the knee-and-chest position, maintained for four or five minutes together, several times a day, is very serviceable. The fundus is thus raised up, the flexion relieved, and the dysmenorrhœa also.

It has been long known that rest is most efficacious in relieving dysmenorrhœa. Some patients habitually go to bed during the menstrual process, finding so much relief from the position. There is nothing therefore new in the recommendation to rest at this time, but experience has shown that the positional treatment above described carries the effect still further. The treatment is particularly valuable in the case of young single women who are suffering from dysmenorrhœa not of such severe character as to render internal treatment imperatively necessary. And indeed I have in several cases employed positional treatment with great success where no examination at all had been made, but where the symptoms and general history conclusively showed that the patients were suffering from commencing uterine flexion.

Positional treatment is also very valuable as an adjunct in cases where internal mechanical apparatus are in use.

Palliative Measures.—Rest, the horizontal position, postural treatment, as above described, are all of first-rate importance. The warm hip-bath, temperature 100° or even higher, is to be recommended. Copious vaginal injections of hot water are sometimes found very serviceable. Ether, compound spirit of sulphuric ether, camphor, and henbane are ordinary and very useful remedies. Gin and water is a common domestic remedy. Poultices with laudanum sprinkled over them, hypodermic injections of morphia, turpentine stupes, are other remedies occasionally employed. Suppositories containing opium or morphia are very effective, but the use of opium is not advisable unless under strict medical orders. Chloral and bromide of potassium are good remedies. Guaiacum (Dewees), black hellebore (Meigs), have been strongly recommended. Colchicum, cannabis indica, and in fact every sedative and anti-spasmodic in the pharmacopœia, have been employed for the relief of the pain with more or less success.

[For severe dysmenorrhœa I have frequently found Hayden's viburnum compound of great service, given in teaspoonful doses every hour for three or four hours.]

During the menstrual period great care is required that the bowels be kept regular, that the digestive organs be in an easily working condition, and that food be adequate but not in too great quantity. It should be known that it is dangerous to use cold baths during menstruation.

Internal Mechanical Treatment.—A careful study of the particular case will generally indicate the line of treatment to be pursued. So far as the treatment of the flexion is concerned, that has been already discussed in previous chapters. The size, shape, thickness, and textural condition of the uterus must be duly appreciated in order that the proper plan of treatment may be selected.

Assuming that internal mechanical treatment is necessary, the following may be given as a sketch of the plan to be adopted:

In more recent cases it is a good plan to employ a vaginal pessary—the cradle for ante flexion, the Hodge pessary for retroflexion—continuously; and occasionally to employ the sound, with the double object of straightening the canal and more completely replacing the uterus.

In more chronic cases the pessary alone is of little service unless the uterus be very soft. In long-standing cases

FIG. 154.



the hardness of the uterus renders necessary frequent use of the sound to aid in the unbending. If the uterus be soft the sound is less frequently required. The steel dilator (described in vol. 1, p. 233) is exceedingly useful in the chronic cases. It may be employed twice a week. In most cases I have found that by the combined use of the vaginal pessary, the sound, or the steel dilator, chronic dysmenorrhœa can be relieved. But the treatment requires to be continued for some weeks and to be resumed at intervals of a few months in very long-standing cases. Thus, the vaginal pessary can be worn continuously, but the dilatation and sound treatment should be applied at intervals.

In a chronic case, where the internal os uteri is the seat of induration from the long-continued flexion compression, the question of incision arises. In some such cases slight incisions at this spot facilitate the treatment. [Slight incisions are useless. They should be done properly or not at all.]

The stem treatment is applicable to chronic cases. It is quite unnecessary for more recent cases which can be readily cured by vaginal pessaries and the occasional use of the sound. But in chronic cases, as explained in the

DYSMENORRHŒA.

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FIG. 155.



FIG. 156.



chapter on Flexions (see vol. 1, p. 234), the stem treatment is applicable, though for my own part I confess that I have as a rule a preference for other methods of treatment.

In the treatment of dysmenorrhœa, the treatment of the uterus as a whole must be kept in view. It is of little use to open the canal, to straighten it, and to reduce the flexion, unless means be taken to strengthen the uterus itself: this is only to be done by careful nutrition. In chronic cases, the cure is not obtained speedily even under careful treatment; for when the uterus has become hard the moulding of the organ into a better shape is a long process, and when the uterus is very soft the time occupied in making up the nutritional deficiencies is seldom less than a year or eighteen months.

FIG. 157.



[There are two methods of incising the cervix uteri for stenosis of the canal.

The first is the bilateral incision, and is Simpson's operation. The second is the antero-posterior incision, and is Marion Sims's operation.

Simpson's operation is applicable only to cases in which the intra-vaginal portion of the cervix is normally developed, in which the anterior and posterior segments of the cervix are symmetrical, with the os pointing usually toward the posterior wall of the vagina.

The Marion Sims operation is applicable only to cases of flexion of the cervix in which the intra-vaginal portion is unequally developed; in which the posterior segment is longer than the anterior.

In these cases the os tincæ does not point directly toward the posterior wall of the vagina, but, as a rule, it looks in the direction of its long axis. In all these cases there is ante-flexion to a greater or less extent.

It is a great mistake to perform Simpson's operation in cases of ante-flexion where the cervix is abnormally developed, and it is equally as great a mistake to perform the Marion Sims operation in cases where the cervix is symmetrically developed.

I shall first describe Simpson's operation as performed by my father and myself.

Dr. J. Marion Sims teaches that in all gynæcological

operations, the table, the Sims left-lateral semi-prone position, and the Sims speculum are absolutely indispensable.

Given all these, with the patient and speculum in position, a small tenaculum (Fig. 154) is hooked into the anterior lip near the os tincæ, and the uterus is pulled gently toward the ostium vaginæ, until the cervix uteri rests just behind the symphysis pubis, and nearly in contact with the neck of the bladder.

Holding the cervix firmly there with the tenaculum, the blade of the metrotome (Fig. 155), with the cutting edge to the left, and at an obtuse angle with the handle, is passed along the canal into the cavity of the uterus, and then, gently withdrawing it, the os is incised with a little sawing movement to the right of the patient from a quarter to a third of an inch. The blade is then turned so as to cut in the opposite direction, passed as before into the cavity of the uterus, and, by the same sort of motion withdrawing it, the opposite side of the cervix is cut to the same extent as in the first instance.

The dilator (Fig. 156) is then introduced into the cavity of the uterus till the beak passes the os internum, and the canal is gently but firmly dilated until it is large enough to admit the plug (Fig. 157) that is selected for the completion of the operation. The plug is made of glass or hard rubber or celluloid, and is to be adapted to the individual case. Where the cervix is very small the incision is of course less; where it is large it is greater.

The plug is of conical shape, from an inch and a quarter to two inches long, and varying in size from No. 1 to No. 3. There is a bulb or protuberance at the lower end, and a disk to prevent it from passing wholly into the cavity of the uterus.

This plug is introduced into the cervical canal and then pushed firmly in until the bulb is buried in the incised os. It is held in position by a sound or other pointed instrument, the vagina being extended to its greatest length by this pressure; and while it is held there the upper half of the vagina is firmly tamponed with iron cotton, which retains the plug immovably in position. The lower portion of the vagina is then packed with dry cotton.

The iron cotton is prepared in the following manner: Mix one part of the liq. ferri subsulphatis with three parts of water. The cotton is saturated with this, then squeezed

almost perfectly dry, and kept in a glass bottle nicely corked, always ready for use when required.

After the operation the patient is put to bed, and an anodyne administered or not as may be required; the recumbent position is enjoined absolutely; a bed-pan is to be used in passing water. The patient must be constipated for three or four days. After the first twenty-four hours she can eat anything she wishes, live just as if she had not submitted to operation.

She must on no account be permitted to rise in bed. The object of the iron cotton is to keep the plug from slipping. It forms a solid mass in an hour or two, and does its work well, provided the iron cotton has been thoroughly applied. When there is but little bleeding from the incisions we sometimes make the mistake of packing the vagina loosely. But it is important to always pack it as firmly with the iron cotton as if we were obliged to do it to restrain severe hæmorrhage. Loosely packed, the plug may slip and then we are sure to have bleeding. Firmly packed there is little or no danger of this. The plug may remain *in situ* two, three, or four days, occasionally five; but it is usually removed on the fourth day.

If the packing of the vagina produce pressure on the neck of the bladder a sufficient quantity of the cotton may be removed to relieve the pressure.

The tampon is to be removed with a tampon screw. The index finger is passed into the vagina, the screw is passed along the finger and screwed into a portion of cotton which is removed, then another and another, until it is all removed; and lastly the plug is taken away. After this, warm vaginal washes are used twice a day with carbolic acid or borax or any other disinfectant solution; and it is well to pass the index finger into the os every day to keep it open until the recurrence of the next menstruation. I should have mentioned that the operation should always be performed during the week following a menstrual period so that we may have ample time for the healing process to be effected before the recurrence of the next period. The patient is a prisoner from the time of the operation until the subsequent menstruation is over. She usually lies in bed for a week and after that she has the freedom of the apartment, lounging most of the time on a sofa. When menstruation is over she is allowed to return to her ordinary duties of life. Usually the patient feels little or no inconvenience

after the operation. There is never any constitutional disturbance, no fever, no rise of temperature, and if there should be any pain a single hypodermic dose of morphine will very soon relieve it, and it is seldom necessary to repeat the dose.

If by chance the patient should be taken with a chill followed by fever and high temperature, which I have seen in only two instances, then the entire dressing and also the plug should be promptly removed, leaving the case alone for subsequent operation if it should be necessary.

In the two cases in which this was necessary the operation was repeated at a later period without any constitutional disturbance whatever.

The incision of the cervix bilaterally is, as before said, Simpson's operation. But he and his followers in England have always done it with the metrotome caché. It is applicable only in cases where the intra-vaginal cervix is symmetrically formed, where the anterior and posterior segments of the cervix are equally developed, and then the incisions are to be made from internal to external os. The Marion Sims operation for stenosis of the cervix uteri is very different from this and wholly inapplicable to such cases as the foregoing. It is by antero-posterior section, and is applicable only in cases of antelexion where the flexion is at and below the vaginal junction. In all these cases the intra-vaginal cervix is unequally developed. The posterior segment is two or three times as long as the anterior, and the os tinæ, instead of pointing down toward the posterior wall of the vagina, looks forward in the direction of the vaginal outlet. We must not make the mistake of incising the cervix backward simply because the os looks toward the vulval outlet, for it does this in retroversion where the cervix is perfectly symmetrical. But if the fundus is turned forward at the same time that the os tinæ looks forward, we can make no mistake. Then it is a case for posterior section and not for bilateral incision.

I dwell upon these distinguishing points between cases requiring bilateral incision and those needing antero-posterior section, because the mistake is often made of performing the Marion Sims operation where Simpson's should have been done. And now for the Marion Sims method.

The figure represents a case of antelexion, the finger introduced into the anterior *cul de sac*, showing the fundus of the uterus flexed anteriorly over the outer border of the

finger, while the neck of the uterus projects anteriorly under its inner border.

The patient properly placed, the tenaculum is hooked into the anterior border of the cervix, which is pulled down, as in the former case, until the os is in contact with the urethra and rests on it. The blade of the knife at an obtuse angle, the cutting edge looking backward, is introduced along the canal until the point passes into the cavity of the uterus; then withdrawing and cutting backward with a sawing motion the posterior lip is incised back almost to the insertion of the vagina. The blade is now turned with the cutting edge anteriorly, at the same angle with the shaft, reintroduced along the canal into the cavity of the uterus, and the anterior portion of the cervix at the os internum is incised as the blade is drawn out. Then with the dilator the canal is stretched and the glass or vulcanite plug is introduced as before described, the vagina plugged with iron cotton, and the operation is finished.

Of course the subsequent treatment is precisely the same in both methods of operating.]

The treatment of *membranous dysmenorrhœa* has hitherto been generally very unsatisfactory. A careful and persevering attempt to secure continuous patency of the uterine canal by use of dilators, or tents, or the stem pessary, seems to me to offer the best chance of doing permanent good in such cases, but it may be that some internal remedy may be found efficacious; as yet nothing has appeared of much service.

I have cured two cases of membranous dysmenorrhœa in which there was profuse menstruation and stenosis of the cervix.

I dilated the cervical canal with sponge tents and then thoroughly curetted the cavity of the uterus, as in the operation for granulations, with the Sims sharp curette, and then injected the cavity of the uterus with Churchill's tincture of iodine.

While succeeding with these two, I failed utterly in three other cases.

Prof. Fordyce Barker reports cases successfully treated by the use of iodoform applied to the cavity of the uterus.]

CHAPTER XXXV.

LEUCORRHŒA AND NON-SANGUINEOUS DISCHARGES FROM THE GENERATIVE ORGANS.

Normal Secretions of the Generative Passages.

PATHOLOGY.—WATERY DISCHARGES—MUCOUS and PURIFORM DISCHARGES—SANIOUS and OFFENSIVE DISCHARGES—Their various Physical Characters and Causes—SYPHILITIC and GONORRHOËAL DISCHARGES.

ETIOLOGY.—Constitutional, Local, and Specific Causes.

TREATMENT.—General Treatment—Removal of the Cause—Resort to Watering-places—Baths—Injections—Internal Remedies.

The Normal Secretions of the Generative Passages.—In a state of health there is poured out from the mucous membrane of the vagina, from the sebaceous and muciparous glands at the orifice of the vagina, from the vulvo-vaginal glands situated one at each side just within the orifice of the vagina, from the cervix uteri, from the whole of the mucous tract extending from the ostium vaginae to the termination of the Fallopian tubes, a secretion sufficient to lubricate the opposed surfaces of the mucous membrane. This secretion is liable to be physiologically increased in quantity, as during congress, and under other circumstances, and it is liable also to pathological changes of abnormal character.

At the orifice of the vagina, we have *sebaceous follicles* scattered over the nymphæ, clitoris, and inner surface of the labia, the secretion of which contains butyric acid, and has a strong and somewhat ammoniacal odor (A. Farre). Around and at the sides of the vaginal aperture there are many *muciparous follicles* which secrete viscid mucus. Further, we have the vulvo-vaginal glands, which secrete a viscid fluid with a neutral reaction (Beigel),* resembling somewhat the prostatic fluid, and having a peculiar odor. The secretions of these glands at the vaginal orifice are liable to considerable increase during venereal orgasm.

The *vaginal mucous membrane* secretes a fluid, at first transparent, acid, and mixed with large quantities of epithelial debris. It usually appears at the outlet as a whitish or

* "Researches on the Secretions in Fluor Albus." By Dr. Beigel. *Deutsche Klin.* 1855, p. 205.

milky-looking secretion. Sir C. M. Clarke considered this appearance due to the entanglement of air, just as the saliva forms a whitish accumulation at the corners of the mouth in individuals speaking rapidly. The more decidedly *curdled* aspect of this secretion occasionally observed appears to depend on the albumen being precipitated by the acid of the secretion. In the vaginal mucus Donné found, on examination by the microscope, a number of *trichomonata*, which are oval, shaped like a pear or biscuit, and are from six lines to an inch and four lines long. Respecting these animalcules, however, Scanzoni makes the remark that their presence is connected with a certain alteration of the product of the vaginal secretion, and that they do not develop much except in a mucus incontestably of pathological nature. Beigel also failed in finding them.

- The mucous secretion of the *uterine cervical cavity* is of a very different character altogether. The glands of the uterine cervix, first accurately and thoroughly described by Dr. Tyler Smith,* are exceedingly numerous, and when in a state of activity, capable of producing an enormous amount of secretion. Hence their extreme importance with reference to the etiology and nature of leucorrhœa.

The secretion of the glands of the cervix uteri is alkaline. It is, when seen issuing from the crypts of the mucous membrane, transparent, somewhat resembling the mucous secretions of the nasal passages, or white of egg, in appearance, but very tenacious and viscid; it contains many mucous corpuscles, and epithelium of the columnar variety is mixed up with it. The characters, as here described, are lost in the discharge as usually witnessed, after it has passed down the vaginal canal and become mixed with the secretions of the latter. The effect of the admixture of the secretions of the cervix and vagina is a white, soapy or creamy fluid. It now and then happens, however, that the cervical secretion escapes from the vagina in the form of masses of coagulated albumen. Ordinarily, and when the parts are in a condition of health, the secretion from the cervix is not abundant. The mucus lubricating the vaginal passages during labor comes chiefly from the cervix uteri.

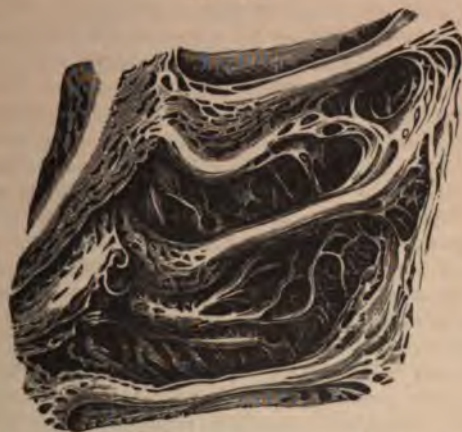
The natural secretions of the *lining membrane of the body of the uterus* during the inter-menstrual periods, are, in a

*"On the Pathology and Treatment of Leucorrhœa." London: Churchill. 1855.

state of health, and when the uterine functions are carried on properly, very small in amount, and colorless. But when the cavity of the uterus is increased in size, the area of secreting surface is necessarily much extended, and important results follow, as will be hereafter explained when we come to consider the causes of leucorrhœa.

Lastly, respecting these secretions in a state of health, it must be stated that usually they are only sufficient in quantity to lubricate the parts; but there are not a few instances in which the secretions are much more profuse, and yet

FIG. 158.*



without entitling the case to be considered altogether pathological. In some cases, the increase in quantity is purely physiological.

PATHOLOGY.

The more prominent physical characteristics of the various discharges to which we have now to direct attention have been made the basis of a rough sort of classification. Thus, there are *watery* discharges, *mucous* discharges, *mucopuriform*, and *purulent* discharges. Then, we have discharges which occasionally assume a *sanious* character, in which there is an evident admixture of blood elements.

* Fig. 158 shows interior of cervix magnified. (Tyler Smith.)

Offensive discharges also form a class, the differential diagnosis of which may be usefully pointed out.

It will be convenient to discuss these *seriatim*.

WATERY DISCHARGES.

Pregnant women are sometimes the subjects of a discharge of a watery nature, the origin of which is open to some doubt. The fluid may escape gradually, and the flow may be persistent for a longer or shorter time; or the quantity may be greater, but the duration less. In some cases the discharge comes certainly from the amnion.

There is another class of cases in which a watery discharge occurs from time to time, *i.e.*, where the uterus is occupied by the *hydatidiform* or *vesicular mole*—"hydatid pregnancy," as it was formerly called. Patients believed to be pregnant increase too rapidly in size, foetal movements are not felt, the mammary symptoms are in abeyance, the whole aspect of the case being irregular, so to speak, and yet there are strong reasons for believing the woman to be pregnant. After a time, slight losses of blood may occur, and slight but repeated discharges of watery fluid, generally accompanied by labor-like pains; or discharge of watery fluid alone is observed. The cause of the discharge is rupture of the cyst-like vesicles composing the chief part of the degenerated contents of the uterus; partly perhaps also to expulsion from time to time of amniotic fluid. Respecting the appearances presented by the hydatidiform bodies themselves, which may be expelled together with the watery fluid, see p. 64, vol. ii.

Another cause of watery serous discharges from the vagina is found in the peculiar growth first described by Dr. Clarke under the name *cauliflower excrescence*, but which is now known as epithelial cancer or epithelioma. The fluid discharged in such cases is described in the work of Sir C. M. Clarke as "little more than a clear watery fluid; blood, however, is sometimes mixed with it, or perhaps comes away alone in large quantities." * The quantity of fluid discharged is sometimes enormous. Dr. Ramsbotham records a case in which twenty dozen napkins were used in a week. Safford Lee describes the discharge as brownish, like colored saliva, and this description is very accurate.

* Vol. i., p. 34.

Uterine polypus is occasionally the cause of a very profuse watery discharge. This fact has not been sufficiently dwelt upon. I have observed this symptom in a marked degree in several instances.* Here discharges of a watery nature are observed alternately with sanguineous discharges, besides profuse menstruation, and other signs of polypus. The more usual form of discharge attendant on uterine polypi is not, however, that now under consideration. Such watery discharges are occasionally the sole symptom in cases of polypus of the uterus.

An abundant serous, or sometimes offensive, discharge may be due to a *fungous cancerous growth* within the uterine cavity. This is a form of disease of great rarity.†

Tubercle of the Uterus.—In this rare disease a continuous profuse watery discharge, of a dirty yellow or pale brown color, extending over a considerable period, may be noticed.

Sometimes an *ovarian cyst* becomes adherent to one of the Fallopian tubes, or, at all events, in some way becomes connected with it; the contents of the ovarian cyst pass into the Fallopian tube, thence into the uterus, and flow away gradually from the vagina. The signs present in such a case would be: previous existence of a tumor situated in the hypogastrium, or more or less to one side, subsidence of the same, an occurrence of simultaneous watery or serous discharge from the vagina. This mode of termination of an ovarian cyst is rare; Dr. West only noticed it in one out of sixty-eight cases. I have observed the fact in two instances.

Watery Discharge following Parturition.—In Dr. Ashwell's work‡ will be found related particulars of five cases in which a profuse watery discharge, coming away in gushes, was noticed some days after labor. In only one of the cases was opportunity afforded of ascertaining *post mortem* the condition of the uterus: in that case, "three elevated masses, having a fungoid and melanotic appearance," were found growing inward from the uterine wall. Such cases are rare.

Sir C. M. Clarke refers to another cause of watery discharges from the vagina, the "*oozing excrescence of the labia*,"

* See cases by Dr. Elkington, illustrative of this fact, in "Obst. Trans.," vol. i.

† See Sir J. Y. Simpson, *Med. Times and Gaz.*, Jan. 15, 1859.

‡ "On Diseases of Women," p. 507.

probably identical with what would be now termed chronic eczematous affection of the skin covering the parts in question, associated with a chronic inflammatory condition of the tissues beneath.

Lastly, it is just within the limits of possibility that the watery discharge may be really an *involuntary escape of urine* from the bladder, either caused by paralysis of the muscles surrounding the urethra, or due to vesico-vaginal fistula. [Urine is sometimes discharged involuntarily in laughing, sneezing, coughing, lifting, or other physical exertion. A napkin worn for a few hours makes the diagnosis clear by its urinous odor.]

MUCOUS AND PURIFORM DISCHARGES.

The cases in which discharges having this character are observed form that large class to which the term "leucorrhœa" is more usually applied. In this group the discharges are more or less completely continuous and are more or less opaque. The color varies exceedingly; it may be whitish, decidedly yellow, yellowish-green, or of any intermediate shade. The consistence of the discharge also varies; it may be viscid, gelatinous, of the consistence of cream, or quite fluid.

Most cases of "leucorrhœa" are of a composite nature; that is to say, the discharge observed at the vaginal orifice proceeds from more than one source, and results from the mixing of secretions from the cervical mucous membrane, from the mucous membrane lining the vagina, and, in certain cases, also from the interior of the body of the uterus itself.

In most cases, there is a preponderance of secretion from one or other of the sources indicated. The difference in the source of the discharge has been made the basis of a division of cases of leucorrhœa into "uterine" and "vaginal;" the former including cases in which the discharge proceeds chiefly from the uterus (the cavity of the cervix), and the latter including those in which the discharge has a vaginal origin.

If the discharge consist of a curdy-looking fluid, of acid reaction, and containing in suspension tessellated epithelium *débris* in quantity, it generally proceeds from the mucous membrane of the vagina.

If the discharge consist of a soapy-looking matter, or of

vitreous lumps of coagulated mucus, or of viscid tenacious mucus, its origin is the cervix uteri. It is only in cases where the cervical glands are in a very active condition that products of this kind are seen externally in any considerable quantity.

If the discharge be of a creamy character, tolerably profuse, and constant, it proceeds from the cervix uteri, or, as I have found in a considerable number of instances, from the cavity of the body of the uterus. But the secretion of the cervix alone is, or may be, rendered puriform by admixture with the vaginal secretions.

It is thus evident that, from the physical characters of the discharge alone, we cannot obtain in all cases positive information as to the precise spot from which it is poured out. Where circumstances render it necessary that more exact information be obtained an examination must be resorted to.

PURULENT DISCHARGES.

a. When the purulent discharge is *continuous* the origin of the discharge is probably the vaginal mucous membrane, the uterine cervical glands, the surface of a cancerous or other ulcer, suppuration of retained membranes or placenta after abortion, etc. An important class of cases, in which there is continuous discharge, is that in which the purulent discharge is the result of *gonorrhœal* infection.

b. Non-continuous Purulent Discharge.—In the other class of cases—in which there is a purulent discharge only lasting for a time, ceasing, and then recurring—the source of the discharge is either the uterine cavity itself, or an abscess situated near the vagina, and opening into that canal. Purulent discharges, whether continuous or non-continuous, far more often than has been supposed, proceed from the cavity of the body of the uterus; and we have positive evidence of this origin in cases where, either from contraction of the uterine canal at the junction of the body and cervix (produced by senile atrophy, flexion of the uterus, etc.), an accumulation takes place within the body of the uterus, and in which the symptom we are now considering—occasional and abrupt discharge of purulent fluid from the generative passages—is observed. Sir C. M. Clarke and Dr. Ashwell both allude to a form of purulent discharge produced, as they describe, by formation and retention of pus

in the uterine cavity, the pus so formed escaping from time to time in the manner just described. In a case of Dr. Ashwell's the purulent fluid expelled amounted to nearly half a pint on two or three occasions. I have observed many precisely similar cases, though the quantity so expelled has not been so great as this. Profuse discharge of pus from suppuration of a polypus of the uterus has been noticed (Safford Lee). Dr. Matthews Duncan* has called attention to such an occurrence, particularly in the case of old women who have ceased to menstruate. In a woman who is still menstruating, the symptoms are dysmenorrhœa, a peculiar feeling of tightness round the loins, sickness or vomiting, etc.; these symptoms finding sudden relief in the discharge of a certain quantity of purulent fluid. If menstruation have ceased, the symptoms slightly vary. Flexions of the uterus in women who have borne children are very frequently attended with accumulation and periodic expulsion of a purulent fluid from the uterine cavity. I lay the more stress upon this fact, as it is one which has not yet seized hold on professional appreciation, and probably Dr. Ashwell's cases were of this kind.

One of the most important causes of this occasional purulent discharge is *pelvic abscess*. The abscess may follow after, or be the result of, parturition; in which case other signs would lead to a suspicion of its origin. Another highly interesting class of cases is that in which an abscess, the result of suppuration of the contents of the cyst of a peri-uterine hæmatocele, discharges its contents into the vagina. In both classes of cases, however, the discharge appears suddenly, and they markedly differ in this respect from ordinary cases of purulent leucorrhœa.

SANIOUS DISCHARGES.

These evidently contain a certain admixture of blood-elements. In women the subjects of profuse menstruation, as the discharge of blood is becoming less, there is generally observed a period when there is a sanious discharge. Where an hypertrophied (so-called ulcerated) condition of the villi lining the cervix is present, slight bleeding readily occurs. Sanious discharges are not unfrequently found to be due to morbid growths within, or organic disease of, the

* *Edinburgh Medical Journal*, March, 1860.

uterus; fungoid condition of the uterine mucous lining, malignant ulceration of the os uteri, etc.; and we find, combined, leucorrhœa and very slight but continuous hæmorrhage. In polypus of the uterus, such sanious discharge, alternating with hæmorrhages or with colorless leucorrhœal discharge, is observed. Whatever, in fact, is capable of giving rise to hæmorrhage may occasion discharge of a sanious character. In cases of pelvic hæmatocœle, where an opening has formed between it and the vagina, and the contents are in process of evacuation, there will be a sanious discharge. The presence of a more or less continuous sanious discharge is a condition of things requiring a careful digital examination.

OFFENSIVE DISCHARGES.

This quality of the discharge is important in reference to the determination of disease in certain cases. Discharges of an offensive character have been usually considered as absolutely indicative of the existence of *cancer*. It is true that, in almost all cases of cancer of the uterus there is to be remarked a particularly offensive odor of the discharge proceeding from the vagina; but it is also true that it may be absent. The smell of cancerous discharge has a peculiar fœtor: so peculiar that it can hardly be mistaken for anything else, according to some authorities. It is certain, however, that the peculiarity is not equally appreciable by different observers; the absence of a peculiarly fœtid odor, or indeed the absence of fœtor of any kind, does not shut out the possibility of the presence of cancer. [Fœtor is evidence of sloughing. Cancerous discharges are never fœtid till destruction of tissue begins.] *Sarcoma of the uterus* gives rise to a very peculiarly offensive discharge. This fact cannot be too much insisted on, for there are records of cases in which disastrous results have followed the belief on the part of the practitioner that cancer of the uterus was necessarily associated with presence of a fœtid discharge. The later the stage of the cancerous discharge the more constant is the fœtor, the ulcerative process appearing to be generally associated with it. It must not be forgotten that there may be fœtor in any of the diseases of the uterine organs in which hæmorrhage is present, if cleanliness be not observed; clots of blood retained and decomposing are especially liable to give rise to it. And it sometimes occurs in cases where pessaries are employed.

Another cause of offensive discharge from the vagina is the *presence of a dead ovum or portions of the fetal membranes, etc., in the uterus*. It is more generally connected with retention of the whole or portions of the *placenta*. The previous existence of pregnancy and the occurrence of delivery would point out the nature of the case. In some few cases which have fallen under my own observation, the presence of a foetid discharge was connected with retroversion of the gravid uterus occasioning such retention, and I have observed the same circumstance in conjunction with retention of portions of the ovum with antelexion. Offensive discharges in women *during the puerperal state* are so obviously connected therewith, that the relation of the two things as cause and effect could hardly escape recognition.

Apart from the existence of pregnancy, *flexions* of the uterus causing retention of fluid within it may give rise to offensive discharge. It sometimes happens that the discharges from the vagina are offensive without any obvious cause. Thus cases are observed in which the discharge at the menstrual period is offensive, and preceded or followed by leucorrhœa having the same character. In such cases flexion of the uterus will generally prove to be the cause. I have seen cases of this kind in quite young women.

It is possible that the hymen may, by preventing free escape of fluid from the vagina, be the cause of an offensive discharge.

Want of cleanliness is occasionally the cause of an unpleasant odor of the discharges from the generative organs. When the sebaceous follicles situated at the entrance of the vagina secrete copiously, this phenomenon may be observed.

Among the physical qualities of discharges from the vagina, *their effects on the surface of the body with which they come into contact* have to be considered. Some discharges from the vagina are quite devoid of irritating properties; but the reverse is often observed. Irritating effects, such as redness, excoriation, attended with smarting pain of the skin of the inner side of the thighs and the external genitals, are common in connection with excessive vaginal secretion, however produced; constant contact with the vaginal secretion, often in a state of hyper-acidity, produces this result. Occasionally excoriations are produced by irritating discharge from the ulcerating surface of a cancerous disease of the cervix uteri. Again, *symphilitic* sores may

spread and produce others in the immediate neighborhood.

GONORRHŒAL AND SYPHILITIC DISCHARGES.

The interest attaching to the subject renders it necessary to devote a short time to the consideration of *sypilitic* and *gonorrhœal leucorrhœa*, and to mention some facts useful in the elucidation of cases suspected to be of this nature.

The subject is a difficult one, the pathology of these affections being still in a very unsettled condition, and observers being by no means agreed as to what is to be called gonorrhœa, and what syphilis. Thus Dr. Whitehead considered the uterus, in cases of gonorrhœa, more affected than the vagina; by others the vagina is considered to be the proper seat of the affection. Dr. Tyler Smith believed that many of the cases set down by Dr. Whitehead as cases of gonorrhœal leucorrhœa were cases in which the leucorrhœa was of syphilitic origin.

There appears unquestionably to be a *sypilitic leucorrhœa*; but the difficulty is to distinguish it from the more simple form.

The diagnosis of supposed *gonorrhœa* has always been found very difficult to diagnose in the female subject, for the reason that the discharge arising from gonorrhœa and that of ordinary leucorrhœa are very much alike. Gonorrhœa in the female is, in its worst form, an intense vaginitis, the discharge being made up of epithelial plasma and purulent matter; more frequently it is a vulvitis, the inflammatory action being limited to the mucous surfaces at the vulva. The meatus urinarius very frequently participates in the discharge and irritation in cases of gonorrhœa. The collateral facts relating to the coming on of the attack are characteristic: the attack begins somewhat suddenly; there are heat, pain, and burning along the course of the urethra, all intensified and increased during micturition; there is usually also a purulent discharge from the urethra. Sometimes blood follows the evacuation of the bladder. When the gonorrhœal discharge becomes chronic, the urinary irritation becomes so much lessened in degree as not to attract attention unless inquired after. If a discharge from the urethra can be made out, it will very materially assist the diagnosis. Sir C. M. Clarke thought the diagnosis of gonorrhœa impossible; and it must be confessed that this is very often found to be

the case. A discharge in one sex producing a discharge in the other does not prove that the infecting individual is the subject of gonorrhœa; for it is a well-authenticated fact that an apparently simple discharge in the male may give rise to a discharge in the female, and *vice versâ*. Cases in which these points rise up for determination require the exercise of great caution and careful investigation before giving an opinion. A case of simple balanitis in the male, contracted by intercourse, may, it is said, be distinguished from a case of gonorrhœa by the fact that the symptoms of the former affection come on a few hours only after intercourse, whereas in gonorrhœa there is a period of incubation of from four to fourteen days, attended with chordee.*

It is impossible for the practitioner to exercise too great caution in pronouncing an opinion for or against the specific nature of a discharge from the female generative organs. In the words of the late Dr. Ashwell, "it is always his duty to cure the disease, but rarely to venture upon an exposition of its nature. If he can positively affirm that it is of simple origin, let him do so, if suspicion has been aroused; if not, it is better to avoid any distinct allusion to the matter."†

ETIOLOGY.

From what has been already stated in reference to the varieties of physical characters observed in the non-sanguineous discharges from the generative organs, it will be gathered that the *causes* of these discharges are many.

They resolve themselves into two, *constitutional* and *local* causes.

Constitutional or General Causes.—The first of these is *climate*. In warm countries, leucorrhœa is more common than elsewhere, and coexists with a great tendency to menorrhagia, which indeed, in common with leucorrhœa, arises in great measure from deficient tonicity of the uterine vessels, frequently the forerunner of serious uterine disease. Moist and damp situations appear to have a similar effect: thus the inhabitants of Holland, Belgium, and the fenny districts of England are said to be peculiarly liable to leucorrhœa.

* See case by Mr. Nunn, quoted by Dr. Tyler Smith in his work "On Leucorrhœa," p. 129.

† "Diseases of Women," p. 175.

A state of *plethora* is capable of giving rise to leucorrhœa. Women who live too well and take but little exercise suffer in this way. When the opposite state of things is present, and the system is reduced by losses of blood or defective nutrition by "chronic starvation," in fact, to a condition of *anæmia*, leucorrhœa may be one of the results observed. Whether in the case of a plethoric or an anæmic patient, leucorrhœa may occur irrespectively of child-bearing. It frequently happens, however, that the influence of *child-bearing* is very considerable in causing leucorrhœa, particularly in anæmic individuals. The effect of child-bearing is twofold. Women in an anæmic, half-starved condition, whose blood is thin and watery, frequently suffer to a very troublesome extent from leucorrhœa during the period of pregnancy; after pregnancy has ended, the increased action of the various glands connected with the generative organs continues, the effect of which may be persistence of the leucorrhœa.

In individuals of *phthisical tendency*, leucorrhœa is more apt to arise in connection with child-bearing, and in such persons, indeed, very frequently independently of it. In some cases, *over-lactation*, by inducing a state of extreme debility, appears to produce leucorrhœa, often in an extreme degree of profuseness.

The relations of *menstrual disorder* and leucorrhœa as cause and effect require a word or two. Leucorrhœa is often present in individuals in whom menstruation is absent; and Dr. Tyler Smith* considered the leucorrhœa as vicarious of the menstrual secretion in such cases. It is questionable how far this view of the case is correct. It appears more rational to suppose that both the leucorrhœa and the menstrual deficiency are due to derangement of some one or other of the vital processes. Thus the individual is rendered weak by over-lactation or some other debilitating agency; the menstrual secretion becomes less and less healthy, and less sanguineous in character; she becomes affected with leucorrhœa; the leucorrhœa is then naturally more profuse at the menstrual period, when the generative organs are in a state of engorgement, than at other times.

Chronic diseases of the lungs, especially *emphysema* and *valvular affections of the heart*, are often observed in associa-

* "On Leucorrhœa."

tion with chronic leucorrhœa, which is, under such circumstances, difficult to cure.

There are some general observations which apply to all these cases in which leucorrhœal discharge arises from a constitutional or general cause—that, as a rule, symptoms which are usually associated more particularly with actual pathological changes in the uterus, such as pain, tenderness, etc., are, at all events at first, absent. Further, the quantity of the discharge is not very considerable, unless there be some local reason for it; and lastly, the discharge itself, when produced by purely constitutional causes, is less liable to become offensive or sanious than in cases where there is some actual lesion of the generative organs.

When leucorrhœa is associated with any general defective condition of the bodily health, it may be taken for granted that, if the leucorrhœa be not absolutely dependent thereon (a relation which is found to subsist in many cases), it is at all events aggravated and rendered persistent thereby.

Local Causes.—By far the most common local cause of leucorrhœa is *flexion of the uterus*. Flexion of the uterus gives rise to leucorrhœa either by obstructing the free outlet of secretions from the uterine cavity or by keeping up a continuous congestion of the whole organ. The drainage of the uterine cavity is deficient, the shape of the uterus is mechanically unfavorable to easy escape of fluid from its interior, and the internal os is partly closed by the compression there produced by the uterine flexion. Hence accumulation of leucorrhœal fluid, sanious just at the end of menstruation, puriform later on, coming away in gushes at intervals in many cases. The fluid so retained *in utero* irritates it, excites more secretion, and we have now a condition spoken of as “endometritis.” The interior of the uterus is never quite empty, and is sometimes much distended with the retained secretion.

In other cases the chronic flexion, by keeping up a continuous congestion of the cervix uteri, gives rise to excessive secretion from the os and cervix. Still more is this liable to occur if the os be widely open or everted, and the delicate everted surface of the interior of the cervix subjected to friction and pressure against the floor of the vagina.

It may be stated as a general rule that chronic and obstinate cases of leucorrhœa will be almost invariably found on

investigation to be due to uterine flexion. In some few cases this troublesome leucorrhœa is almost the only symptom; in the majority of cases other marked symptoms of uterine flexion will be found.

Endometritis is very commonly due, as above explained, to defective drainage of the uterus. But in some cases there occurs in connection therewith excessive growth or, more properly speaking, excessive congestion of the uterine mucous lining, so-called "fungosities." Under these circumstances the secretion from the uterine interior is very profuse, and the leucorrhœal discharge proportionately great in quantity.

Lacerations of the cervix uteri are undoubtedly a cause of leucorrhœa. The irritation and inflammation of the everted surfaces of the interior of the cervix occasion both loss of blood and discharge of a leucorrhœal character.

Hypertrophy of the cervix uteri or of the *body of the uterus*, fibroid growths in the uterus, either in the form of *fibroid tumors*, *fibroid polypi*, or *mucous polypi*, these are almost always accompanied with leucorrhœa, sometimes with very abundant watery or non-sanguineous discharge. *Inversion of the uterus*, *cancer of the uterus* in its various forms, give rise to characteristic non-sanguineous discharges often very profuse in quantity. *Prolapsus of the uterus* or of the *bladder*, *growths in the vagina*, are other causes. *Excessive sexual intercourse*, *masturbation*, the latter generally accompanied by a very relaxed condition of the vaginal aperture, are causes of leucorrhœa.

Ascarides in the rectum are not uncommonly the cause of leucorrhœa, not only in children, but in adults. In such cases the ascarides appear to travel from the rectum to the vagina. *Hæmorrhoids*, *vascular tumor of the meatus urinarius*, may also produce leucorrhœa.

The *specific* causes of leucorrhœa are *gonorrhœa* and *sypilis*. In these cases the affection is more generally limited to the *vulva*, but the inflammatory actions may extend higher up, even as far as the uterus itself, and in a few cases probably as far as the ovaries (*gonorrhœal ovaritis*). The diagnosis of the specific causes of leucorrhœa has been already alluded to (p. 113, vol. ii.).

TREATMENT OF LEUCORRHŒA.

The treatment of leucorrhœa (excluding from the consideration, discharges of a specific nature) is of two kinds,

general and local. In most cases, a combination of the two is the more suitable, and yields most satisfactory results. Even when there is a tangible alteration of the uterus, giving rise to leucorrhœa, general treatment is often of very great service; although, in order to cure the disease giving rise to the discharge, local measures may be indispensable.

To remove the *cause* of the leucorrhœa is the first indication. The treatment must have regard primarily to that. The cause must if possible be removed. There are few cases of leucorrhœa in which the uterus is altogether sound. The organ is usually congested, large, its tissues relaxed, and the activity of the glandular apparatus lining the cervix unnaturally increased; under such circumstances the primary object is to remove the condition of the uterus on which the leucorrhœa depends (see Treatment of Chronic Congestion of the Uterus; also chapter on Abnormal Conditions of the Lining of the Uterus). The next element in the treatment is of the utmost importance; in all cases it is absolutely essential to supervise the due action of the digestive organs, and of the great cutaneous surface. Plans of treatment, in other particulars the most judiciously contrived, may prove useless unless these primary points be attended to. The quantity, quality, and mode of taking food must be carefully adjusted to the requirements of the case. The skin must be kept warm, and its due action insured by employment of friction, baths, and exercise. In patients who have been long the subjects of leucorrhœal discharge, the importance of carefully regulating the "mode of life" cannot be over-estimated; and it is the more necessary to insist on this, as not unfrequently the practitioner on the one hand, and the patient on the other, pay far too little attention to these essentials; the result of this neglect being a temporary, and not a radical, cure of the affection.

Resort to Watering-places.—Several watering-places have obtained repute from the efficacy of mineral waters in removing leucorrhœa, especially that of a chronic form. It is unquestionable that very good effects are frequently obtained from the use of the waters in question; the effect produced results in many cases from change of air, the perfect rest and relief from ordinary cares and anxieties, the regular exercise, simple diet, and change in the mode of life generally, all of which play, unquestionably, a most important part in bringing about the cure. The improve-

ment in the general health which follows an improvement in the general nutritional activity, is usually rapidly followed by a cessation or diminution of the leucorrhœa. In a certain number of cases we find great difficulty in persuading patients to follow up systematically the course of treatment enjoined while they are living in their own houses, surrounded by home associations, and in a manner tied down to home habits; and for this reason it is sometimes necessary to send patients to watering-places in order that they may be induced to give themselves a fair chance of recovery. In the choice of a watering-place, regard must be had to the special condition and requirements of the patient. Recent flexions of the uterus, the organ being still in a soft condition, may be much improved indeed, and the leucorrhœa sometimes cured, by a course of baths; but when due to a chronic flexion only temporary benefit will be derived, unless other means of cure are also adopted.

Baths.—These are very powerful therapeutic agents in the treatment of leucorrhœa dependent on constitutional causes. The use of the bath has the effect of determining the blood to the skin, and of relieving the congestion of the internal organs. The condition of the patient must regulate the form of bath. The most simple is the "sponge-bath," the patient being directed to sponge the whole body night and morning with warm or tepid water; the skin being rubbed dry by means of a coarse towel, and the friction continued for some minutes. In women who are not strong the employment of cold baths is not to be recommended. Then comes the hip-bath, which may be either of pure, salt, or medicated warm water. The simple hip-bath is, however, very serviceable. After the bath, the skin should be rubbed as in the case of the sponge-bath. With due care, the hip-bath or sponge-bath, alone or together, may be used in all cases, however debilitated the patient may be. It is necessary that a "reaction," as it is termed, take place after the bath, or it does harm, and the patient suffers from headache or other inconvenience for some hours after. There are some cases which are most benefitted by the warm bath, in which the patient is wholly immersed. Thus, in cases of leucorrhœa which, from the severity of the symptoms and suddenness of their invasion, may be termed *acute*, the warm bath is of the greatest utility.

Injectons.—Judiciously used, injections are of the greatest value in the treatment of leucorrhœa. In many cases the

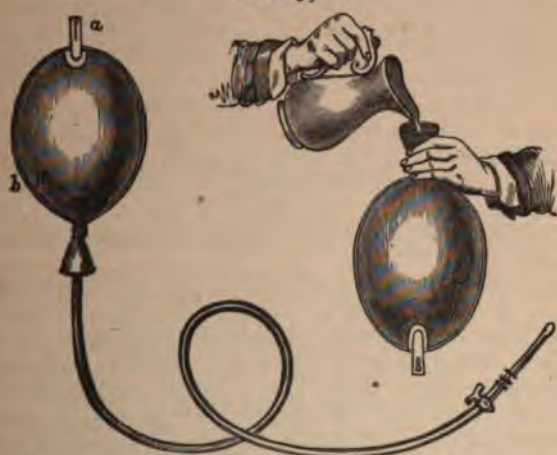
have a curative effect; in all cases they are of some service; and in certain cases they are almost indispensable. But it is not less true that leucorrhœa may be often cured without recourse to injections at all.

The first point to be attended to in the employment of injections is the form of instrument to be used. It is in most cases mere trifling to employ a small syringe. What is necessary is an apparatus by means of which a considerable quantity of fluid may be thrown up and obtain access to the cervix uteri. A large-sized gum-elastic vaginal pipe, rather longer than the speculum, open above by five or six tolerably large perforations, should be first introduced into the vagina so as to reach the os uteri. Having been introduced, the lower end of the pipe is then to be connected with the pipe of the injection apparatus. This is made in a variety of forms. Higginson's or Kennedy's apparatus is convenient for the purpose. I have, however, found it exceedingly difficult to induce patients, especially those who are weakly and debilitated, to use any instrument requiring manual force, however slight, for a sufficient length of time to do good; moreover, the quantity of fluid capable of being used at each operation is too restricted. A somewhat continuous irrigation of the cervix uteri is necessary, and this is not to be had by the ordinary apparatus—unless, indeed, by taking unusual pains or trouble in the matter. In order to supply the defect in question, I have had constructed a very simple and effective instrument, by which the patient can have the benefit of irrigation of the vaginal part of the uterus of some minutes' duration, and without the necessity for manual effort, such as pumping, of any kind. An india-rubber bag or reservoir, capable of holding nearly a gallon of water, has attached to it a long flexible pipe, which ends in the vaginal exit tube. The bag filled with water is hung up above the patient, or placed on an article of furniture a little above the patient's body. The water descends by the action of gravitation alone; the rapidity of the flow is regulated by simply turning a stop-cock, placed just outside the vaginal tube, and the water flows until the reservoir is empty. The douche apparatus in question has the advantage of great portability and simplicity. The douche should, it is hardly necessary to observe, be used with caution in cases where pregnancy is suspected.

The next question is as to the nature of the fluid to be

injected. Very much benefit will be derived from the use of water, if only a sufficient quantity be used at each injection. And for a variety of reasons, not the least of which is that it is always accessible, and no preparation or forethought is required, it is advantageous to use water alone. In the former editions of this work I have recommended the use of cold water in ordinary cases, but a more extended experience has led me to the conclusion that in some cases injurious effects are liable to result from the use of quite cold water, and, unless in exceptional cases, I believe warm water at about 85° or 90° is to be preferred (see also chapter on Congestion of the Uterus).

FIG. 159.*



A variety of substances are used mixed with water, and constituting *medicated* injections. Most of these are considered beneficial from the astringent properties they possess. Alum, sulphate of zinc, nitrate of silver, decoction of oak bark, or tannin, are those most ordinarily used. A combination of tannin and alum (one or two drachms of tannin with four drachms of alum to two pints of water), recommended by more than one eminent authority, I have found very convenient. In all cases where medicated injections are used, it is desirable to employ, first, a simple injection

* The "uterine douche," constructed as described above, is to be procured of Messrs. Savory & Moore, New Bond Street.

of water, and to throw up the medicated liquid last. It is frequently found necessary, in obstinate cases, to change the injection from time to time. A particular remedy loses its effect after a few days' use.

Medicated Pessaries.—These are prepared with cacao butter, have the shape of a rifle bullet, and contain various astringent or caustic substances in suitable quantities. When cold, they are firm and easily adjusted in position at the os uteri. The warmth of the body soon liquefies the pessary, and leaves its active constituents free.

Blisters to the lumbar or sacral region are sometimes employed in obstinate cases of leucorrhœa.

Injections of a medicated nature are now and then necessary to obviate the offensiveness of the discharge which may be present, as in cases of cancer, cauliflower excrescence of the os uteri, etc. In such cases, antiseptic agents, *e.g.*, diluted tincture of iodine, tincture of iron, perchloride of iron suspended in glycerine, chloralum, etc., and applied by means of cotton-wool, or lint, are exceedingly useful.

In cases where the discharge is acrid, and gives rise externally to irritation, it is necessary to order frequent ablutions with tepid water. A lotion containing a little carbonate or baborate of soda in solution is occasionally found serviceable in such cases.

Internal Remedies.—The object with which we give internal remedies in leucorrhœa is usually that of remedying the constitutional derangement, whatever that may be. Purgatives may be necessary to produce regular action of the bowels, especially at first—and of these it is better to give small doses frequently than large doses at longer intervals. Where the patient is chlorotic, aloes may be given; but in other cases it is to be avoided. The debility with which, in most cases, leucorrhœa is associated, necessitates the employment of tonic remedies, of which the best is unquestionably iron: less probably depends on the particular form of the drug than on the fitness of the case for iron in any shape. Cubebs, copaiba, etc., have been recommended in leucorrhœa, as having special effects in diminishing secretions from mucous surfaces. The ergot of rye has a better claim to our notice. I have used it in cases where the uterus was in a lax, congested condition, with the double effect of relieving profuse menstruation and leucorrhœa sometimes associated. As a rule we cannot expect much specific effect from internal remedies in cases of leucorrhœa.

Stimulants are frequently necessary in the treatment of chronic cases of leucorrhœa attended with debility and prostration; they are to be looked upon in some instances quite as essential as good food. The stimulant selected should be one which is found to suit the patient. The administration of stimulants is to be avoided when the patient is plethoric, and when the viscera, pelvic and abdominal, are loaded with blood.

Schönbein and Aran have recommended lavements containing aloes suspended in mucilage or soap and water, in the treatment of chronic leucorrhœa. The lavements are to be used every day, or every other day, the rectum having been first washed out by water alone. The remedy in question must be used with caution. It may here be remarked that aloes formed one of the principal ingredients in the

FIG. 160.*



celebrated pills of Stahl—in high repute many years ago for the cure of leucorrhœa.†

The treatment of leucorrhœa dependent on local disorders of various kinds necessarily involves the removal of the special cause. In all cases where it is dependent on deficient drainage of the uterine cavity, the principal object in view will be to facilitate the escape of the fluid from the uterus (see Treatment of Flexions). Cases of this kind which have been hitherto known under the term "endometritis" have been frequently treated by internal applications to the interior of the uterine cavity. Dr. Playfair, who has devoted much attention to the subject, recommends the application of various caustic or semi-caustic substances to the uterine interior by means of a probe of peculiar construction round which is wrapped cotton-wool charged with the selected application. First the interior of the uterus is

* Fig. 160 represents Playfair's probe, which is of flexible metal. The probe can be fixed to a boxwood handle sufficiently long to be used through the speculum.

† See Dr. D. D. Davis's work, vol. i., p. 367.

wiped out by means of cotton-wool wrapped round the probe, and the liquid used is then introduced in the same way. The application Dr. Playfair prefers is either tincture of iodine or equal parts of crystallized carbolic acid and glycerine.*

CHAPTER XXXVI.

NERVOUS DISORDERS REFERABLE TO THE UTERUS—HYSTERO-NEUROSES—GENERAL CONSIDERATIONS.

Peculiarities of the Nervous Relations of the Uterus—Reflex Excitability of the Uterus—General View of the so-called Hysterical Diseases—Question as to the "Central" and "Peripheric" Origin discussed—Arguments for Uterine Origin—The principal Hystero-neuroses enumerated: Nausea and Vomiting; Hysteria and Hystero-epilepsy; Reflex Mental Disturbances; Cephalalgia.

The uterus has peculiar relations to the nervous system. It has comparatively little nervous susceptibility of one kind, but is largely endowed with nervous excitability of another kind. The healthy uterus is very little sensitive to the touch, and almost every accessible part of it may be touched without giving rise to sensation *when the organ is not diseased*. But the uterus is a most sensitive organ in regard to its reflex excitability. The disorders which are produced in consequence of this reflex excitability constitute a very interesting class of affections, and they have at all times attracted much attention. In early times the word "hysteria," employed to designate them, conveyed also a notion as to their source, which many modern writers appear, as I consider most erroneously, to set aside altogether.

In hysterical disorders we have present for consideration two elements:

1. THE CONDITION OF THE NERVOUS CENTRES.

a. Simply unduly impressionable.

A. Emotionally.

B. Impressionable in an undue degree to reflex disturbing influences.

c. Actually diseased.

* Meeting of British Medical Association, Cork. *Brit. Med. Journ.*, March, 1880.

2. PARTICULAR PERIPHERIC (REFLEX-EXCITING) IRRITATION.

- a. In the uterus.
- b. In the ovary.
- c. Elsewhere.

The phenomena of hysteria, using the term in its most general sense, affect more or less the whole machinery of the body, the muscles of the limbs and body, the involuntary muscles, as of the stomach and other organs, as well as other general disturbances in the sensitiveness of various parts,—all implying that the nervous centres which control this extensive machinery are implicated. The two theories of the “central” and the “peripheric” origin of hysteria or “hysterical” disorders are not in any way incompatible the one with the other, as will be apparent from reading the above statement of the possible conditions in cases where hysterical phenomena are observed. It is probable that the condition of the central organs is really the more important of the two, and that hysterical phenomena only occur in cases where the central organs are unduly impressionable. And in one sense of the word they may be said therefore to be diseased. But we have to go further than this, and, admitting a “diseased” condition of the nervous centres, we have to explain the alternate presence and absence of hysterical phenomena in the same case. In order to explain that it is necessary to assume either (1) that the central organs undergo at various times changes, or (2) that they are operated upon from without through the intervention of nerves distributed to other organs of the body. In other words, there is either (1) a centrally originated nervous disturbance, or (2) a peripheric irritant action giving rise to the manifestations in question.

My own observations have led me to the conclusion that in hysteria and hysterical disorders we have for the most part what have been termed since the days of Marshall Hall “reflex” symptoms, originated by a disturbance or irritation *primarily* acting, not in the central nervous system, but at its periphery, the central nervous system being in many cases unduly impressionable, and therefore more readily acted on by reflex disturbing agencies. In certain cases the disturbance may be originated emotionally.

It has been long the opinion of those who have made diseases of the generative organs their especial study—dating, in fact, from the Hippocratic era—that irritation of

these organs plays a very important part in the production of "hysteria."

Up to the present time the state of knowledge in reference to the diseases of the generative organs in women has not been sufficiently advanced to enable gynæcologists to define precisely the *modus operandi* and the exact nature of the irritation involving the female generative organs which is capable of exciting hysterical phenomena, and hence the assertion of gynæcologists to the effect that these hysterical phenomena do originate in the sexual organs has been discredited. The fact that attacks resembling those observed in women are liable to occur in the male sex has been made the basis of an argument that the female generative organs can have nothing to do with hysteria. This is not, however, a reasonable conclusion. It is well known that convulsions, for instance, may be produced in various ways; the nervous central organs are presumably not very different in the two sexes. There is nothing extraordinary in the fact that convulsions or spasmodic movements should be observed in both sexes, the convulsive movements being so much alike as to be hardly distinguishable. But that proves nothing as to the exciting cause of the attacks in question, nor does it in any way render it impossible that the uterus or the ovaries may be the exciting cause of such attacks in the female sex. Looking at the predominance of the emotional nervous element in the female; looking also at the peculiarities of the sexual organs, it would rather be anticipated that irritation of these organs would be more likely to derange the nervous centres in the female than irritation of the sexual organs in the male.

In the last edition of this work (1872) I described, under the head of Nervous Disorders referable to the Uterus, hysteria, epileptiform convulsions, nausea, and vomiting, as symptoms due to reflex irritation seated in the uterus. Since that time further observation has enabled me to verify in many cases the truth of the theory there put forward. Other observers have also been working in the same direction. Dr. Engelmann has published a very interesting paper "On Hystero-neuroses,"* a term well adapted as a heading under which to classify and arrange those affections in which the uterus can be shown to have an important controlling or originating influence. In this paper he de-

* "Amer. Gynæc. Trans.," vol. ii., 1878.

scribes *serialim* the reflex disturbances of the brain, the eye, the pharynx, the larynx, the bronchi, the breasts, the joints, the stomach, and the hystero-neuroses of pregnancy. Certain cases of epilepsy are attributed by Dr. Engelmann to reflex irritation proceeding from the uterus, but he does not apparently attribute the phenomenon of hysterical convulsions to this source. In this respect Dr. Engelmann has not taken the same road as myself. But in regard to the hystero-neurosis of the stomach resulting in vomiting, Dr. Engelmann's views appear to be quite in accordance with my own, and he gives many cases to show the connection between uterine irritation and severe vomiting; not only so, but in reference to the vomiting of pregnancy his observations are singularly confirmatory of those which I published some years ago.

The term "hystero-neurosis" employed by Dr. Engelmann seems to me to be a very valuable one.

The precise relationship subsisting between the uterus and the ovaries as disturbing elements is still matter for discussion. The conclusion which I have arrived at, taking the various facts into consideration which are adducible, is that in the majority of cases the uterus is responsible for reflex disturbance. This is not, however, the conclusion arrived at by all authorities, and indeed the source of the so-called hysterical affections has been of late years decidedly attributed to the ovaries by the latest writer on the subject, Professor Charcot, whose researches on the subject of hysteria and hystero-epilepsy have deservedly attracted so much attention. Charcot adopts the view of Negrier that the ovaries are responsible for the convulsive manifestation in question.

The neuroses, reflex effects of uterine irritation, appear to be many in number. Arranged in the order of their frequency they are:

NAUSEA AND VOMITING.

HYSTERICAL ATTACKS AND SO-CALLED "HYSTERICAL" SENSATIONS.

HYSTERO-EPILEPSY.

REFLEX MENTAL DISTURBANCES.

CEPHALALGIA.

CHAPTER XXXVII.

HYSTERO-NEUROSES (*continued*)—HYSTERICAL NAUSEA AND VOMITING, DUE TO REFLEX UTERINE IRRITATION.

Nausea and Vomiting very common Symptoms in Cases of Uterine Disease—It is a Reflex Hystero-neurosis—Frequent Association with Uterine Flexion—Various Conditions of Softness or Hardness of the Flexed Uterus—Various Degrees of Severity of the Nausea or Sickness—Illustrative Cases—Engelmann's Views.

TREATMENT.

It is an unquestionable fact that nausea and vomiting are very common in connection with uterine disease. This is a fact which many years of careful observation has made me acquainted with. This gastric disturbance appears to be of reflex origin, and to be originated in the uterus when in a state of disease. There is no doubt that disease of the ovaries is also capable of originating reflex nausea and vomiting, but my own observation leads me to the conclusion that the uterus is responsible for the production of this troublesome reflex disturbance in the large majority of cases. It is very rare to meet with a case of severe flexion of the uterus unaccompanied with such reflex irritation or nausea, although this affection is now and then unattended with nausea or vomiting. This reflex nausea and vomiting may be very slight, or it may be most severe in frequency and in degree. It is by far the most common of the reflex symptoms (hystero-neuroses) producible by disease of the uterus, the hysterical class of reflex symptoms occurring far more rarely. This reflex nausea and vomiting is one of the most common of the symptoms observed in cases of uterine disease (see chapter on Symptomatology of the Uterus).

It is surprising, looking at the extreme frequency with which nausea and vomiting really occur, that more has not been said about these gastric disturbances in connection with uterine disease. In the last edition of this work special notice was directed to this important subject. Dr. Engelmann,* of St. Louis, has more recently published some valuable remarks thereon, which are in full conform-

* On "Hystero-neuroses."—"Amer. Gynæc. Trans.," vol. ii., 1878.

ity with the conclusions I have myself been led to form on the matter.

The disease which more especially seems to occasion this gastric reflex disturbance is flexion of the uterus. The proof of the truth of this statement has in numberless cases been made evident to me by the remarkable results in the relief of the sickness and nausea which have been observed to follow treatment directed to the cure of the flexion of the uterus in such cases. These results have been so uniform, the exceptions so very rare in which marked relief has not been thus obtained, that the weight of evidence is irresistible.

In the last edition of this work (1872) the following paragraph occurs:

"Connection between Nausea and Vomiting and Disease of the Uterus.—For many years I have carefully and rigidly analyzed the cases of uterine disease which have come before me, with the endeavor to establish definite relations between symptoms and alterations or lesions. Sickness and nausea are so frequently attendant on uterine disease that this symptom necessarily comes very commonly under observation. Facts have led me to establish a very close connection between nausea and sickness, and flexions of the uterus. Indeed nausea and vomiting are rather common symptoms in cases of flexion of the non-impregnated uterus, though it by no means follows that every case of flexion will be attended with nausea and vomiting. Endeavoring to trace the connection between the flexion and the nausea or vomiting, I was led to the conclusion, that it was more likely to be observed in cases where the flexion led to retention of the secretions of the organ, as in dysmenorrhœa, and in certain other cases where the flexion was severe, independently of such evidence of retention of fluid in the uterus. Thus, severe flexion alone, or coupled with retention of fluid in the uterus, have seemed to me to be demonstrably and unmistakably the cause or essential accompaniment of the troublesome nausea and vomiting observed in the non-pregnant condition. The os and cervix uteri are not uncommonly under such circumstances turgid, congested, and otherwise somewhat changed. The fulness, congestion, or so-called inflammation of the os and cervix uteri has been noticed in connection with obstinate vomiting by previous observers, and has been assumed to be the cause of the symptom. It will quite readily fall in

with my view of the matter to accept this position, but my explanation goes beyond it, and is to the effect that the condition of congestion of the os is really secondary to the more important lesion, the alteration in the shape (flexion) of the uterus."

Since I became acquainted with the remarkable connection between nausea and flexions of the uterus, I have had many opportunities for verifying the accuracy of this conclusion. Indeed I observe the symptom so frequently in cases of flexion of the uterus, that I have come to look upon it as almost a part and parcel of the disease. Flexions do not invariably give rise to vomiting and nausea. But it may be stated, as a rule to which there are few exceptions, that when a patient presenting other uterine symptoms is found to be liable to nausea or sickness recurring from time to time, it may be pretty confidently predicted that the nausea and sickness are due to uterine flexion. When the sickness is obstinate and of long standing, the prediction may be still more confidently made. I have on many occasions seen patients who had been supposed to be suffering from chronic disease of the stomach, owing to the persistent nausea or vomiting, and in which it was proved beyond question that the uterus was the organ really responsible for these symptoms. In the course of my experience, I have seen as many as fifteen to twenty cases where the long-continued sickness due to uterine flexion had so fearfully reduced the vital power by starvation, that recovery seemed almost impossible. And even in the worst of these cases the symptoms ceased almost directly the source of irritation was removed.

In very many cases the gastric disturbance is less severe, but yet it is a serious matter; and in a larger number of cases still it is present as an occasional symptom, only the patient considers that she is troubled with "biliousness," and is not aware that the supposed biliousness is really caused by the uterus. Again, in not a few cases the sickness is only observed at the menstrual periods; sometimes it is so severe at those times that the patient is literally *hors de combat* for one or two days owing to its intensity.

It is pretty constantly observed that these symptoms are increased by movement, or by exertion of any kind; even sitting at the table for meals is often enough to bring on sickness or nausea. This is a mechanical effect of the po-

sition of the body, which by intensifying the flexion for the moment brings on nausea.

The recumbent dorsal position gives relief to sickness when caused by ante flexion. But when the uterus is retroflexed, the dorsal recumbent position often aggravates it. The reason for which is sufficiently obvious.

The cases most difficult to cure are those in which the uterus is extremely soft, and follows the action of gravity most readily. It is not easy in some of these cases to preserve the uterus in a state of real repose. The uterus is readily straightened, but it is not easy to preserve it in this condition. Slight retroflexion follows on the removal of the ante flexion, and *vice versa*. The recurrence of the sickness in such cases indicates that the treatment is insufficient.

But in many severe cases, the uterus is not remarkably soft at the time the patient comes under observation. Perhaps the case has been partly cured, and, the power of taking nourishment having returned, the uterus has become tolerably firm and rigid; indeed, in some cases there is actual hypertrophy of portions of the uterus—*e.g.*, the lips of the cervix uteri. Then an aggravation of the flexion occurs, and the sickness returns with redoubled energy. Under these circumstances the relief afforded by straightening the uterus is almost magical in its rapidity.

The *modus operandi* of the flexion in inducing this reflex symptom is a matter of great interest. It appears to me to be due to the compression of uterine nerves, consequent on the squeezing or stretching of certain portions of the uterine tissues. (See remarks on this subject in a former chapter, at page 210.) Careful observation has convinced me that in most cases the irritation has its starting point at the situation where the compression is greatest, viz., at the angle of flexion—for this part is often found *sensitive to the touch* in such cases, and it is found that the straightening process has the effect of removing simultaneously both the sickness and the undue sensitiveness to touch.

Case of Acute Vomiting from Retroflexion of the Uterus.—Some years ago I saw a lady who was at that time suffering from aggravated nausea and vomiting. She had then been unable to take food of any description for over two weeks. Everything in the shape of food was instantly returned, and the eminent practitioner who had been in attendance upon her expressed his fears that she would actually perish from

inanition. On examination it was found that the patient was suffering from severe retroflexion of the uterus, which there was evidence to show was of long standing, and which had probably undergone acute aggravation within the previous few months. Nothing could be more distressing than the state to which the patient was reduced. Conjointly with treatment to restore the shape of the uterus, it was necessary to sustain life by the administration of beef-tea, one teaspoonful at a time given very frequently, this being the utmost the patient could take for some time, although the sickness underwent a material improvement the moment proper local treatment was adopted.

It invariably happened, when the treatment was suspended, and the instrument removed, that the sickness returned.

*A Case of Acute Hysterical Vomiting, of Ten Months' Duration, caused by Displacement of the Uterus.**—A young lady, æt. 20, the subject of this case, was admitted into the All Saints' Institution, Gower Street, in December, 1879. The general history of the case was as follows: She has always been accustomed to take a good deal of exercise, has led a very active life, but has not taken for some years what would be considered an average quantity of food; the reason for which has been a general disinclination, coupled apparently with the existence of a notion on her part that she did not require much. For the last two or three years she has been in the habit of playing lawn-tennis a good deal, and has done duty in playing the harmonium at a place of worship. Menstruation has never been regular. There have been occasional intervals of two months, but at times the periods have occurred too often and too profusely. There has been a complete cessation of menstruation for the last ten months, since which time she has been ill.

Present Illness.—The patient has been ill for ten months. Since February, 1879, she has suffered from obstinate sickness, which, at first not very severe, gradually became worse and worse. She has not been able to retain food in the stomach for the whole of this period. Of late, the nausea has become more severe. She has now for some little time been able to retain only koumyss in small quantities at a time, the smallest particle of any solid food being rejected at once. She has become excessively emaciated.

* This case is reported in the "Trans. of the Clin. Soc.," vol. xiii., p. 346.

Her weight a year ago was ten stone; it is now stated to be five or five and a half stone only. Her weakness is extreme—she has been unable to sleep, and her general condition is deplorable. Any attempt to take exercise has been attended with aggravation of the symptoms. It was conjectured by her previous medical attendant that she was suffering from some uterine displacement.

Condition on Admission (December 19, 1879).—Patient constantly sick; skin moist; there is a commencing bed-sore over the sacrum. Bowels open; micturition frequent. Pulse exceedingly feeble. Examination of the pelvis and its contents showed that the uterus was very low down in the pelvis, much swollen, and in a condition of acute anteversion, with some considerable amount of ante flexion. The uterus seemed very wide from side to side, owing to general engorgement. It was decided that the sickness was due to the condition of the uterus. In regard to the cause of the displacement and distortion, the patient did not at the time mention it; but a few weeks later she said that in the month of February, 1879, she one day jumped from the top of some seats in a schoolroom six feet in height, to the floor. Another young lady who was with her at the time performed the same feat. They were both of them made sick by the effort. The other young lady went to bed for six weeks, feeling ill, and having, as she thought, a cold. This patient took no notice of the effects of the leap and had, in fact, forgotten it. But the sickness appears to have set in at precisely this time; and there seems little doubt that the leap was responsible for the mischief.

For the first week the treatment adopted was as follows: Nutrient enemata of beef-tea, with a small quantity of brandy, and a few drops of laudanum, were administered three times daily. The patient was ordered to take only a little koumyss by the mouth. Once every hour, during the day, she was placed in the knee-elbow position for two or three minutes, in order to raise the uterus from its low position. At the beginning of the second week she had much improved; the sickness was less, but the patient extremely irritable; no sleep, except for a very short space of time; complaint of great headache, and a condition of general unrest. The uterine sound was now used for the first time, and by its means the uterus was raised, and the position of the fundus changed. The effect of the use of the sound was at first, for two days, to reproduce the sickness to some

extent, but it then became mitigated. At the end of the second week her condition was much improved; she was still taking nutrient enemata and iced champagne by the mouth. Brand's essence of beef and some other food were now given, but with not much success, the stomach still rejecting the greater part of things administered, except the champagne. The koumyss was given up during the second week.

Fourteen days after admission, a small-sized ebonite cradle pessary was introduced, and it has since remained undisturbed. During the third week, food began to be tolerated by the stomach. At first, Darby's peptone was given in small doses, mixed with a little water, frequently. In three days, the patient, tiring of this, gravy soup from a confectioner's was given, one, two, or three spoonfuls at a time; three to four glasses of champagne daily, and about one and a half ounces of brandy, the latter with enemata; also biscuits (crackers) in small quantity. The nausea entirely left her at the end of this, the third week. During the fourth week, the improvement was very marked. She could now take meat in the solid state, and the enemata were abandoned. The power of sleep was restored, and the condition changed for one of absolute tranquillity. The pulse, which on admission and during the first two weeks was under 50, now beat at 80 to the minute. After the fourth week, the patient's appetite became ravenous. It seemed impossible to give her enough; all kinds of food were equally agreeable to her—the anxiety when one meal was over was for the arrival of the next. Six weeks after admission she was permitted to get up, and in a week walked round the room, a quarter of an hour at a time, without any ill effects. Seven weeks after admission, the patient was convalescent and fit to leave the Institution. Her condition is now wonderfully altered for the better; the cheeks have filled out, and she has entirely lost the look of extreme illness. All kinds of food are taken, and in large quantities. She has gained two stone in weight. Six weeks afterward menstruation returned, and the patient was reported perfectly well, and in full enjoyment of active life.

Remarks.—The case is, in my opinion, to be read thus: The patient was ill-nourished, weakly, and in a bad state of health, before the actual illness began. The menstrual irregularities show that the uterus was in a disturbed condition also. It is probable that its tissues were soft, want-

ing in resistance, and that it was somewhat displaced and altered in shape before the commencement of the severe illness. The leap, which occurred in February, 1879, probably produced a sudden and considerable displacement of the fundus uteri downward and forward—acute anteversion and flexion; and from that time up to the period of admission the uterus remained in its displaced, distorted condition. A secondary result occurred, viz., a continued congestion and engorgement and consequent swelling of the uterus. Menstruation was thus also suppressed. The sickness was a reflex phenomenon due entirely to the irritation set up in the uterus. It completely disappeared when the uterus was restored to its proper shape and position. This restoration was effected by the use of the knee-elbow position, by the sound, and by the cradle pessary. There would have been no objection to the use of the cradle pessary at first, but it was thought best to employ other methods of raising the uterus during the first fortnight.

Acute Vomiting for Two Years, due to Antelexion of the Uterus.—Another case was that of a single lady of 25 years of age who had been sent to Dr. Wilson Fox under the notion that she was suffering from ulceration of the stomach. Dr. Wilson Fox conjectured the uterus was at fault, and it proved so. This patient had suffered for two years from almost incessant vomiting and occasional hæmatemesis. The uterus was found soft, antelexed (with posterior rotation). Suitable treatment in a short time completely removed the vomiting.

Severe Vomiting due to Antelexion of the Uterus.—Another almost similar case was likewise sent to me by Dr. Wilson Fox in which the patient, a young lady, was reduced to the extreme of prostration—so much so, indeed, that her life was despaired of—in consequence of antelexion of an extremely soft atonic uterus. This case equally yielded to a treatment directed to the rectification of the distortion and displacement of the uterus.

The following case is reported by Mr. L. C. Parkes, M.B., who assisted in the treatment:

Case of Antelexion and Excessive Continued Vomiting.—Miss W. æt. 25. When at school her appetite was very small, and her principal meal was in the evening, not in the middle of the day. Enjoyed good health and menstruated regularly every four weeks until a little over three years ago, when she accompanied a younger sister to Davos

Platz. There she remained seven months. She "had no monthly periods during this time, as the cold stopped them." Since her return, she has menstruated very little, and states that on two occasions the periods were absent eleven and seven months. She says the fluid has been often very thick and lumpy. Miss W. has been under medical treatment for three years, less one month, at first for ulcers on the legs—which healed, but repeatedly broke out again a few weeks after healing; almost constant sickness, and frequent attacks of obstinate constipation and tympanitic distension of the abdomen, these attacks simulating obstruction of the bowels and occurring repeatedly, until her medical attendant came to regard them as hysterical, and advised her being sent away from home to be treated in an institution; and she was accordingly admitted into the All Saints' Institution on February 10.

Previous to admission her dietary seems to have been extremely low for many months, containing meat or fish only once a day in very small quantities. The other solid food consisted mainly of bread and butter, twice a day, in very small quantities also. For a year she has been sick after the conclusion of each meal. The sickness comes on five to ten minutes after she has finished eating. She has suffered for a long time from constant pain in the left side, which is relieved by hypodermic injections of morphia. These morphia injections have been given three times daily during the last year. In the autumn of 1881 nutrient enemata were administered for a period of fourteen weeks, and aperient enemata daily for the last year. She has at times taken pancreatized and peptonized food.

Condition on Admission.—The patient is pale and emaciated, weight 6 st. 10 lbs. The mucous membranes are not very anæmic. The tongue is very red and clean. She complains of a constant pain in the left side above and in the left groin. On examination the uterus was found to be markedly anteflexed and its substance very soft and flabby. For the first three or four days after admission the patient took food well, meat, vegetables, etc., without any subsequent sickness. The morphia injections were discontinued on admission.

On the 5th day after admission the patient began to be sick at first only once or twice in the day.

On February 22 a No. 1 ebonite bar cradle pessary was introduced. This was followed by an excessive muco-

sanguineous discharge. The sickness gradually became worse, every kind of food being very soon rejected. The diet was accordingly reduced to a teaspoonful of Brand's essence every two hours, and $\frac{3}{4}$ ii. brandy in the day. The abdomen was well painted with tinct. iodi., and an aperient enema given every morning.

On February 25 the Brand's essence and brandy were discontinued and enemata of beef-tea and brandy substituted, one every six hours. After two days of this treatment the enemata were returned, unaltered in color but of bad odor, so they were discontinued.

On February 27 the pessary was removed. The sickness is, if anything, worse than before. She is now taking rusks and champagne, which are partly retained. The sound was introduced on the 28th and the uterus straightened.

March 1.—Oysters were added to the rusks and champagne. She manages to retain this fairly well. There is still the same amount of vaginal discharge. March 6.—An elastic No. 2 cradle pessary was introduced. The sickness continues about the same. The nutrient injections have been resumed, but return unaltered. March 8.—The patient is evidently losing ground and appears weaker and more depressed. The pulse is over 100 and compressible. All food taken by the mouth is returned, the solid parts being precipitated from the fluid. Her condition was now critical and gave rise to a good deal of alarm; fears were entertained as to her recovery, owing to the excessive weakness and prostration and the apparent absence of digestive power. March 9.—She now takes peptonized beef-jelly and milk, but is unable to retain it. A hypodermic injection of morphia, gr. $\frac{1}{4}$ daily, is now given. The peptonized food is discontinued.

After this date, Miss W. began to improve. She returned to the former diet of rusks, oysters, and champagne, which seemed to cause the least sickness. The pulse gradually became stronger and less frequent, and the tongue lost by degrees its vivid red irritable character. Toast and tea, bacon, fish, bread and butter, were gradually added to the diet and superseded the oysters and champagne. The sickness gradually became less frequent, and ceased altogether before the end of March. By the middle of April she was able to get out of bed and sit up, and was taking meals of fish, meat, etc. On May 1 the period commenced, but only lasted a day; the pain in the side was still present,

but was decidedly less than before. At the end of May, Miss W. continued to make good progress and was going down to the sea-side. Her weight was then 8 st. 2 lbs., gain since admission being 1 st. 8 lbs.

The constant pain felt in the left inguinal region in this case was due to the ante flexion of the uterus.

The foregoing are typical severe cases, but many more could be quoted in which the symptoms were less severe, but the results of treatment equally satisfactory. In the report of sixty-seven cases of uterine flexion treated in the All Saints' Institution during seven years, published in vol. — of the "Obstetrical Transactions," I have given particulars of certain cases of this kind.

It may be useful to quote here some of the conclusions arrived at by Engelmann* on this subject.

Engelmann regards affections of the stomach as the most frequent of the hystero-neuroses. He divides them into three classes: (A) constant; (B) menstrual; (C) due to pregnancy.

Under A the symptoms are fulness of epigastric region, loss of appetite, nausea, and vomiting. He gives three cases of (1) retroversion, when symptoms were at once relieved by a Hodge pessary; (2) case of a valvular closure of internal os by a small fibroid causing vomiting; (3) intractable vomiting, etc., for several years, caused by indurated conical cervix with stenosis of canal, cured by incision and dilatation. (Probably a case of ante flexion.—G. H.)

Under B, he states that at least one fourth of his hospital patients complain of the gastric trouble in connection with menstruation. The symptoms were most marked when the menstrual period was not regular or normal. "Of seven private cases of menstrual hystero-neurosis of the stomach, only one was free from severe uterine disease."

Under C, Engelmann classes the nausea, the vomiting, the epigastric distension, etc., occasionally found in pregnancy, among the hystero-neuroses.

Case of Sympathetic Hystero-neurosis of the Stomach (Dr. F. Formento, New York).† This was a case of intractable vomiting and hysterical convulsions, lasting for several years, caused by a peculiar condition of the os uteri. Patient married at æt. 21. Dysmenorrhœa before mar-

* *Loc. cit.*

† *Amer. Journ. Obst.*, vol. x., p. 455.

riage. Suppression for three months after marriage. No pregnancy, but vomiting observed occasionally. The vomiting increased in severity, and became almost constant. Great uneasiness at epigastrium. Nutrition greatly impaired; extreme prostration; prolonged anæmic condition. After a few months, convulsive attacks, a tetanic condition of the muscles, sometimes a cataleptic condition, at other times trismus, opisthotonos, these attacks occurring several times a month. Various methods of treatment unavailing. Menstruation going on, but dysmenorrhœa observed. On examination, conical cervix, hard, resistant to touch, almost fibrous, of a deep red color, and smooth surface, external os so small as to be almost invisible, not allowing smallest sound to penetrate; uterus of normal size and position.

Marion Sims's operation was performed. Immediate relief of vomiting. Restoration of strength complete. After ten months return of the symptoms. Renewal of operation, os having become contracted, and sponges and dilators used once or twice a month for some months. Recurrence and a third and a fourth repetition. Will she ever recover permanently? says the author, of this case.

The *nausea and vomiting of pregnancy* has been discussed in a separate chapter (see p. 391, vol. i). The views there enunciated as to the cause of vomiting in pregnancy have been suggested by the observation, in the first place, of cases of vomiting in the non-pregnant condition; and it will be found that a careful study of the phenomena of vomiting and nausea in the pregnant and in the non-pregnant condition reveals an uniform and identical cause in both sets of cases.

TREATMENT.

The effects of mechanical treatment (by which is meant not necessarily the application of instruments) in relieving the sickness in the cases now under consideration are most remarkable. In the milder variety of cases the horizontal position is sufficient to give relief, but when the uterus is markedly flexed this is not sufficient, for some cases require the dorsal position (cases of ante flexion) and others require the prone position (cases of retro flexion). In the really severe cases little benefit will be derived from the horizontal position alone—internal mechanical treatment, use of

the sound, use of suitable pessaries, etc., are required; and judiciously selected treatment of this kind is capable of effecting very marked benefit—the cessation of the sickness or its speedy amelioration. Internal mechanical treatment is, however, not always successful just at first. The first effect of such treatment is sometimes to produce a temporary intensification of the severe symptoms, and it then seems as if the treatment was worse than useless. But this is a temporary effect only; the case soon assumes a more favorable aspect, and a marked improvement sets in most decided and encouraging in character. This temporary bad effect was observed in the case mentioned at page 136, and the patient was so ill that it seemed as if the treatment had better be omitted. It was, however, persisted in, with the best results. I only know of one case where the treatment could not be continued: in this instance it was deemed advisable to wait for a time as the patient's condition was not a critical one.

In cases where the restoration of the uterus to its proper shape is delayed, or when the sickness arises from other alterations of the uterus, palliative measures are required. Above all, the strength has to be sustained. In severe cases, where the stomach persistently rejects food, it is best at once to give up the idea of administering solid food of any kind. The patient should be made to suck small pieces of ice from time to time, and a teaspoonful of milk, or milk-and-water, should be swallowed every half hour, or more frequently, if possible. Minute quantities of brandy and water or champagne may be given every hour. Drugs given by the mouth, in really severe cases, appear to do more harm than good. An opiate liniment rubbed in over the epigastric region, or morphia applied endermically, has been found of great service. If the milk or other nutritive material, such as beef-tea, which may be tried, are rejected by the stomach, it is best to relinquish for a time the attempt to feed the patient by the mouth at all, and to have recourse to injections. A beef-tea enema, with a few drops of laudanum and two or three teaspoonfuls of brandy, may be given as often as may be judged necessary, the return to a more natural method of feeding being for a time postponed. Sedatives, antispasmodics or medicines of other kinds may or may not be indicated, according to the peculiarities of the case, but they will be best administered in these severe cases by the rectum.

In the less severe cases, where food is capable of being taken by the stomach with more or less facility, and where the vomiting is only occasional, a carefully adjusted diet will still be the best means of giving the patient relief, and it will be a matter of experiment as to what kind of food suits best. Soda-water and milk are very generally borne by the stomach, but more substantial nourishment may be given, such as the case admits of. Pepsine is often very serviceable in cases where the digestive powers are much weakened. Various forms of pre-digested food are now available—Dr. William Roberts's (of Manchester) peptonized preparations, etc. Raw oysters succeeded in one case when all other kinds of food failed.

Counter-irritation, by blisters to the epigastrium, have been strongly recommended, and I have myself used them with advantage. But since I have traced the connection between obstinate nausea and vomiting, and flexions, I have rarely had occasion to use these or other palliative procedures, the removal of the uterine flexion answering every purpose.

CHAPTER XXXVIII.

HYSTERO-NEUROSES (*continued*)—HYSTERIA, HYSTERICAL CONVULSIONS, HYSTERO-EPILEPSY.

HYSTERIA—HYSTERICAL CONVULSIONS—HYSTERO-EPILEPSY.—Various Degrees of Hysteria—Milder Forms of the Affection—Phenomena observed in the simple Hysterical Paroxysm—More Severe Cases in which Convulsions are observed—Character of the Convulsions—Differentiation from Epilepsy considered—Hystero-epilepsy—Views of Gowers and Charcot—Author's Observations on the Etiology of Hysteria and Hystero-epilepsy—Series of Eighteen Cases Illustrating the Connection between Flexions of the Uterus and Hysteria or Hystero-epilepsy—Criticism of Charcot's Views as to the Effects of Ovarian Compression—General Conclusions.

TREATMENT.

The phenomena of hysteria, using the word in the widest sense, may be conveniently classed as follows:

I. A state of predisposition to hysteria, evidenced by excess of emotional tendencies, behavior generally marked, or liable to be marked, by exaggeration of emotional actions.

- II. Hysterical paroxysms without convulsions.
- III. Hysterical fits with distinct convulsions.
- IV. Hysterical fits allied closely to epileptic attacks, and generally described as hystero-epilepsy.
- V. Simulation of other diseases, *e.g.*, joint disease.

I. *The Hysterical Predisposition*.—An important generalization has been made by many writers, viz., that hysterical phenomena are more usually witnessed when there is a condition of "debility" present. Debility is frequently synonymous with irritability; weakly individuals are frequently "nervous," which is only another way of saying that they are too readily excited and are too impressionable. The word "hysterical" is frequently used as a synonym for "weak." A common mistake appears, however, to be the use of the word "fanciful" in describing some of these hysterical symptoms.

The hysterically predisposed patient may never have a real hysterical attack in the absence of any decided exciting cause.

II. *Actual Hysterical Paroxysms, without Convulsions*.—The hysteric paroxysm in its simplest form is commonly ushered in by pain or discomfort at or near the umbilicus. Next occurs a sensation as of something rising to the throat, a feeling of choking or suffocation, or a sensation of a ball in the throat—*globus hystericus*. Rapidly the patient then bursts into laughing or crying or sobbing, at the end of which there follows a subsidence of the ebullition and recovery of composure, with a sensation of exhaustion. Coincidentally with the termination of the paroxysm a flow of limpid urine is often observed.

Some of the incidents just described may be absent.

III. *Hysterical Fits with Distinct Convulsions*.—In this class of cases the phenomena are very marked. We have the simple hysteric paroxysm, but something more. The patient falls into a state of apparent unconsciousness very rapidly, and becomes affected with convulsive action of a very decided character. Practically it is necessary, owing to the close relationship between this class of cases and the next (No. IV.), to consider the two together.

III. and IV. *Hysterical Fits with Convulsions and Hystero-epilepsy* (so-called).—Epileptic and hysterical convulsions have been frequently differentiated one from the other, but it appears that although there are typical forms in a con-

siderable number of cases, there are many instances in which the phenomena have characters partly of epileptic, and partly of an hysterical nature.

The following is an epitome of the description given by Dr. Gowers* in his recently-published treatise:

In epilepsy (*grand mal*) there is loss of consciousness, together with continuous or intermitting convulsions, one or both. In slighter attacks (*petit mal*) there is usually transient loss of consciousness with little or no convulsion.

"The hysterical attacks vary much in character. There may be merely trifling emotional and spasmodic disturbance, such as is commonly understood by the designation, or there may be most severe and long-continued spasm, apparently rivalling a severe epileptic fit in the violence of the muscular contractions, attended with impairment if not actual loss of consciousness, and often with paroxysms of delirium. But the chief part of the muscular spasm which occurs in these attacks differs from that of an epileptic fit in being so grouped as to resemble that which may be produced by the will. The convulsive movements have therefore a quasi-purposive aspect, they are *co-ordinate* in character though excessive in degree. At the onset there may be tonic or clonic spasm (a pseudo-epileptic stage), but this rarely resembles closely that which occurs in epilepsy."

Instead of the term "hysterical" Dr. Gowers uses the word "hysteroid"—a term proposed by Dr. W. Roberts to denominate the severe fits of the "co-ordinated" convulsion—preferring this term to "epileptic hysteria," "hysterical epilepsy," or "hystero-epilepsy."

The two classes, epileptic and hysterical, shade into each other. Thus "the severe hysteroid fits may recur during years, in very much the same manner as do epileptic fits. . . . Moreover, hysteroid or co-ordinated convulsion often succeeds a true epileptic fit. . . . It is often most difficult, even impossible, to learn from the description of hysteroid convulsions, whether they occur alone or whether they succeed slight epileptic seizures. . . . The initial convulsion of many pure hysteroid fits is pseudo-epileptic. . . . There are rare cases in which the attacks are actually of a nature intermediate between the two."

In 1,000 cases observed by Dr. Gowers in which the form

* "Epilepsy and other Chronic Convulsive Diseases," etc. (Churchill, 1881), p. 2.

of convulsion could be ascertained, it was co-ordinated or hysteroid in 185, or 18½ per cent, and "up to the fourth decade of life, one third of the chronic convulsive cases presenting hysteroid phenomena (primary or part epileptic) occur in males.*

It does not appear that Dr. Gowers draws any sharp line between the slight "hysterical" and the severe hysteroid or co-ordinated attacks. Thus, he says, "these attacks (hysteroid) vary greatly in severity and character. When slight they are of the trifling character popularly known as a 'fit of hysterics,' into which an emotional patient will work herself up, and in which there is no distinct affection of consciousness. When severe the violence of the spasmodic movements is almost inconceivable. . . . Similar variations are seen in the mental disturbance which attends the attack. This may be trifling, and amount only to an abnormal emotional state, or it may be so severe that for a time the patient is in a state of maniacal frenzy." So again, the laryngeal spasm observed in severe cases is "no doubt an extreme degree of the disturbance which in slighter measure causes the globus hystericus." Moreover, "in the patients who suffer from these convulsions other symptoms of hysteria are frequent, and consist of the globus hystericus, aphonia, and the like, but these are usually slight in degree."

The "hysteroid" convulsions described as above by Dr. Gowers include the attacks observed in the female sex as well as the male. And it is evident that in regard to the attacks themselves there is no striking difference between "hysteroid" attacks in men and women.

Charcot's views on the subject of classification are as follows:

A. Hysteria and epilepsy may remain distinct from each other in the same individual. 1. Hysteria may be grafted on epilepsy. 2. Epilepsy may be superadded to hysteria.

B. The hysteria and the epilepsy are coeval. These are "seizure fits." The so-called epileptic form he regards as the highest degree of development of that combination of hysteria.

Attacks of hystero-epilepsy attaining the severity of those observed by MM. Charcot and Richer in Paris are not witnessed in this country. On this subject Dr. Gowers says

* Gowers, *op. cit.*, p. 19.

that "the attacks observed in the Salpêtrière patients commence by a convulsive seizure resembling a true epileptic fit very closely, whereas in the attacks which occur in the natives of this country, the initial tonic stage (though it may resemble that seen in certain aberrant forms of epilepsy) bears little resemblance to the spasm of a typical epileptic fit."

The observations of Charcot are most interesting, and the phenomena of the hysterical paroxysm have been described by him, and still more recently by Richer,* in a manner which leaves little to be desired so far as the outward manifestations, convulsions, spasms, anæsthesia, paralyses, temporary intellectual disturbances, etc., are concerned. And these delineations are also most complete in regard to the manner in which the manifestations in question are capable of being modified or influenced by the action of *external* agencies. The ebullition, as it may be termed, has, in short, been pictured in a most graphic manner.

Circumstances have led me to investigate the various hysterical manifestations observable, from an *etiological* point of view. I had no predisposition to take any particular view of the matter, and it was only by repeated observation that I became convinced that the uterus is generally in a state of irritation in cases where these manifestations are observed; thus, in fact, confirming the more ancient theory of the subject. And I was induced to take this view of the influence (etiotologically) of the uterus from the circumstance that in cases where the two conditions were conjoined—viz., uterine irritation and liability to attack—the attacks always appeared to cease on removing the irritation. In fact, experience revealed to me that in the course of treating the disorder of the uterus, the liability to hysterical attacks ceased. Further observation showed that the peculiar irritation productive of hysterical symptoms and attacks was always one and the same—viz., a flexed and distorted state of the uterus. Since I first became aware of this relation I have omitted no opportunity which has occurred to me for verifying and repeating the observation. Cases of this kind now referred to do not present themselves with great frequency; cases of marked hysterical paroxysms, so far as my experience goes, are not very com-

* "Études Cliniques sur l'Hystéro épilepsie ou Grande Hystérie." Par Dr. Paul Richer. Paris: Delahaye. 1881.

mon, but during the last ten years, during which I have been testing the matter in question, several instances have fallen under my notice; and as yet the facts I have collected are strictly confirmatory of the truth of the above generalization.

There appear to be two classes of cases:

1. Those in which the attacks are induced primarily by some strong emotion—the reception of distressing news, a fright of any kind, a severe mental shock, etc. Here the operation of the causes is a direct action on the central nervous system, which in such cases may or may not be weakened in some way, and predisposed, or not, to be affected by an excitement acting from without. These cases are undoubtedly met with in practice, but they seem to be rather rare.

2. Those in which the attacks are induced primarily by a reflex disturbance from within, and quite distinctly so. This class of cases is numerically far more frequent than those classed in the foregoing list. They include cases in which the hysterical manifestations are severe, and more or less constantly liable to occur.

Now, the evidence which I have been able to collect, to me convincingly shows that the reflex irritation causing these attacks and other hysterical manifestations is an irritation having its seat in the uterus, and that the particular irritation most potent in producing the reflex disturbance is flexion of the uterus. This view is one which I expressed about twelve years ago.

In the course of my professional experience I have only met with cases which seemed to be cases of hysteria produced in the reflex manner, and I have seen none in which hysteria of a severe character has been brought about emotionally. I do not deny the existence of the latter class of cases (certain of M. Charcot's cases, for instance), but it so happens that I have seen none. On the other hand, I have met with many cases coming under the former category, and in such cases the uterus was found to be the cause of the symptoms; the facts of the cases, the results of treatment, and the whole phenomena of the cases in question, indicating in what has seemed to me a most unmistakable manner that this view of the case was a correct one.

What the precise condition of the uterus is which is capable of giving rise to such remarkable manifestations is a matter of great interest. The results of my observations

have led me to the conclusion that in these cases the uterus is in a condition of what may be termed traumatic congestion, by which is meant that the blood current is forcibly arrested in the tissues of the uterus. The common cause of such arrest in these cases is compression of the organ at its centre by the bending or flexion of the uterus. There occurs as a result acute congestion of the body of the uterus, which becomes aggravated by certain movements and diminished by others. Whence it happens that exertions capable of increasing the flexion are found to bring on the attacks or other hysterical manifestations, while, as a rule, rest and the horizontal position are equally potent in removing them or in preventing their occurrence.

The word "traumatic" seems suitable as explaining the nature of the congestion under these circumstances.

The intensity of the traumatic congestion in different cases appears to vary, but its main characteristics seem to be the same in all instances that I have observed. And the worst and severest cases of hysterical convulsions have been those in which the degree of traumatic congestion of the uterus was actually greatest.

There is another etiological moment present—viz., the compression of the nervous filaments of the uterine tissue at the precise spot where the flexion compression is greatest. When the uterus is forcibly flexed, such compression occurs.

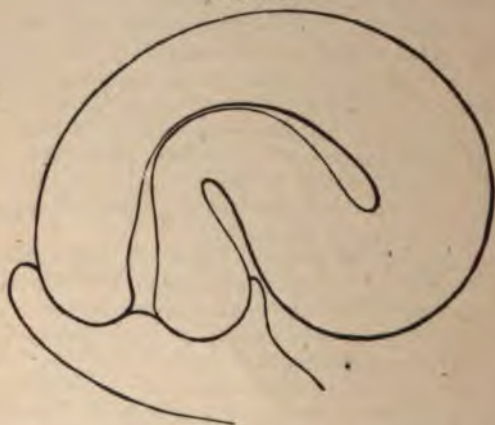
At the recent International Medical Congress I exhibited the model of a section of the uterus constructed in sponge. The model is six times the normal length of the uterus, but the thickness of the walls and the due relation of the parts are carefully preserved. The model is constructed in order to exhibit the effects of acute flexion of the uterus on the uterine tissues. It is observed that when the sponge uterus is bent so as to imitate the change of shape observed in acute flexion of the organ, the sponge is greatly compressed and squeezed together on the concave side of the bend. The model thus enables us to understand that the centre of the uterus is the seat of great compression in cases of flexion, which compression is increased by increase of the flexion and relieved by removal of the flexion. The sponge model also serves to illustrate the production of traumatic congestion, for the compression due to flexion is the cause of the interference with the circulation of the uterus.

Whether the traumatic congestion of the uterus or the flexion compression is the more important in giving rise to

reflex hysterical manifestation, it does not appear to be easy to determine. Possibly both moments are important. And it may be that the traumatic congestion operates in inducing hysterical phenomena by virtue of the compression of the uterine nerves in those parts of the uterus which are actually the seat of the congestion.

The accompanying drawings represent flexions of the uterus severe in degree. Fig. 160 shows a third degree of ante flexion of the uterus. Fig. 161 represents the uterus in a case of retroflexion in the third degree. The seat of

FIG. 160.*



the compression is principally the wall of the uterus on the concave side of the flexion.

I adduce in support of the views now enunciated a series of eighteen cases, arranged in chronological order, observed by me during the ten years from 1870 to 1880. I have observed other cases also, of which records have not been kept. The following series are all of which I have kept records. There are six cases in which the uterus was retroflexed and twelve in which ante flexion was observed.

CASE I. Chronic Retroflexion; Severe Hysterical Attacks.—Mrs. — had been liable to frequent severe hysterical attacks (after which she usually remained in a state of quasi insensibility for some time) ever since her first confinement,

* Ante flexion of uterus (third degree).

which occurred upward of twelve years previously. Latterly severe sickness had occurred. The uterus was found acutely retroflexed. There was an absolute cessation of the hysterical attacks from the time the treatment of the retroflexion was commenced.

CASE II. *Acute Antelexion of the Uterus; almost Entire Suspension of Menstruation for Two Years; Severe Hysterical Attacks.*—The patient was single, æt. 19, a dressmaker. Two years ago attacked with "hysterics," at first severe, afterward less so. On one occasion she lost her voice for five months. Has had lately a peculiar cough. Menstrua-

FIG. 161.*



tion only twice in the two years. While in the hospital had several severe hysterical attacks, strong convulsive action and attempts to beat her head on the floor, sometimes several in the day, and a peculiar cough resembling that observed in laryngismus stridulus. The uterus was found to be in a state of acute antelexion. A stem pessary was employed. The attacks at once became less frequent. In a month she was made out-patient: fits ceased. Two months later pessary removed, complete cure, and return of menstruation.

CASE III. *Acute Anteversion of the Uterus; no Menstruation;*

* Retroflexion of uterus (third degree).

Severe Epileptiform Attacks.—The patient was single, æt. 17; never menstruated. For ten weeks has had fits, as many sometimes as twenty in a day. In service since age of ten years. Pains in hypogastrium, and frequent micturition for four months. Uterus anteverted. Sound easily introduced. Cradle pessary introduced. A month later the fits had become reduced in frequency, and she left the hospital. Menstruation appeared about two months after commencement of treatment and was followed by a complete cessation of the attacks.

CASE IV. *Acute Ante flexion of the Uterus, probably of One Year's Duration; Convulsive Attacks occurring frequently during that Time.*—The patient was married, thirty years of age, had one child four and a half years old. Health tolerably good till one year ago. Six weeks' nursing a sick child appears to have made her ill. The illness began with an attack consisting of slight loss of consciousness for a moment, then convulsions. Since that time has had attacks—two or three a day as a rule; the attacks last a short time, are not accompanied with loss of consciousness as a rule, and during the last three months have become more intense; menstruation had also ceased for three months, but has just occurred again once. The uterus was found acutely ante flexed. A cradle pessary was applied: the sound used to strengthen the uterus. The attacks became at once reduced in frequency and intensity. During the first four days had altogether eleven attacks; during the succeeding ten days only five attacks; altogether she was under observation for seven weeks: the attacks latterly only occurred once in two or three days, and were very slight, while menstruation had occurred a second time rather profusely.*

CASE V. *Retro flexion of the Uterus; Hysterical Attacks following Exertion.*—Mrs. —, æt. 19, married fourteen months. Has had no child. Suffers from hysterical attacks, and her medical attendant believed her to be affected with retro flexion of the uterus.

It appears that four years before marriage she had a severe attack of scarlet fever, which left her so weak that she did not walk for one year, and then began with crutches. Since recovering from this attack she has been liable to what are termed hysterical attacks, following any exertion.

* Fuller particulars of this case in *Lancet*, August 7, 1875.

Menstruation is profuse and too frequent. The uterus is soft to the touch, very distinctly retroflexed. A pessary was applied.

The patient completely recovered, and had a child two years afterward.

CASE VI. *Acute Antelexion; Severe Hysterical Attacks.*—Mrs. —, æt. 34. Has been married fifteen years; no children. Menstruation always painful. Has had bearing-down for years. Ten years ago had St. Vitus's dance, not severely; but has occasional symptoms on and off, such as nervousness for an hour or two when excited. Six months ago had been nursing, for five months severely, and began to feel excessive bearing-down and strangury, became insensible for a week, and urine had to be drawn artificially. Had also pain in abdomen and hypogastric region, the difficulty in passing water continuing. She had severe convulsions at intervals during the time. Ever since this time she has had severe attacks of what are termed "strong hysterics" after any slight fatigue. Uterus in a state of acute antelexion. A cradle pessary was applied. Relief. Later history not known.

CASE VII. *Retroflexion of the Uterus; Hysterical Attacks.*—E. J., a cook, single, æt. 26. Three years ago was under treatment for uterine affection. Has suffered for some time now from hysterical attacks, which last for about twenty minutes, and during which she becomes unconscious. The last attack came on during the singing in church, and she had to be carried out.

Uterus retroflexed. A pessary applied. Cure.

CASE VIII. *Slight Antelexion of the Uterus; Attacks of Convulsions.*—Mrs. —, æt. 33, had four children, the last born six years ago. Six months ago had a convulsive seizure, following a course of nursing and over-exertion. The convulsions produced a kind of opisthotonos. She was conscious throughout, but could not move for ten days. Since this attack has occasional twitchings. No sickness. Easily tires from short walks. Uterus a little antelexed. Sound enters with difficulty. Treatment rest. Result favorable.

CASE IX. *Acute Antelexion of the Uterus; Suppression of Menstruation; Severe Hysterical Attacks.*—Miss —, æt. 20. Has always been weak and delicate. Menstruation began at twelve.

Two years ago she bathed in the sea just before the time

for the period, and it did not occur. She became very ill, and menstruation did not occur for three months. Since that time she has been liable to severe hysterical attacks, and to frequent threatenings of attacks. There was a further catching of cold five months ago, and the menstruation has not occurred since, with one exception.

The uterus was found very low down in the pelvis and anteфлекed. A cradle pessary was employed. The hysterical attacks ceased, but the patient remained for some time in a weak condition. Finally, restoration to health. The hysterical symptoms did not recur.

CASE X. *Retroflexion of the Uterus; Hysteria*.—Miss —, æt. 41. Had a fall from a horse twenty years ago, and has been ill ever since. Treated for hysteria for a long time. It was discovered, nine months ago, to be a case of retroflexion, by Mr. Palmer, of Nayland, Colchester, who has nearly succeeded in restoring the uterus to its proper place, and she is now much better.

CASE XI. *Acute Anteфлекion of the Uterus; Severe Hystero-epileptiform Attacks*.—Mrs. —, æt. 21. Married three years. Ill since six months after marriage. Is subject to severe hystero-epileptic attacks. These chiefly occur after sitting upright, as at meals. They are very severe, and the general disturbance is very acute.

The uterus is in a state of acute anteфлекion and much tilted forward. There is very great tenderness of the epigastrium and of the back, particularly at three special spots.

The flexion and displacement were treated by the sound and a cradle pessary. The attacks were relieved at once, and have not returned since.

CASE XII. *Acute Anteфлекion of the Uterus; Severe Convulsive Attacks*.—Miss —, æt. 38. Out of health one year. Had an attack of bronchitis, on recovering from which she had a succession of severe nervous attacks, on one occasion being for five or six hours unable to speak, or to move the body or limbs, but was all the time conscious. There were many other severe attacks. For three or four months could not sit up one hour, though she could walk a little. Has not improved the last three months. To quote the patient's own description: "There is constant pain in the back, almost constant sickness or nausea, occasional violent retching brought on by walking or even talking. Any exertion of mind or body produces clenching of the hands

and a horrid feeling all over the back and back of the head. Menstruation regular, but extremely painful, and inability to move at these times increased. Feels very often faint, and a sensation then begins in the brain. She feels that she cannot speak, and is very unlike herself. On recovering she feels as if she had been some one else all the time, or as if she had two selves, one quiet and sane, the other idiotic."

Severe antelexion of the uterus. Treated by a cradle pessary. Complete cure.

CASE XIII. *Acute Antelexion of the Uterus; Severe Convulsive Attacks just previous to Menstrual Periods.*—Miss —, æt. 28. Has suffered from severe convulsive attacks since menstruation commenced. These attacks appear generally just previous to menstruation. They have been considered due to disease of the brain.

The attacks are of the following kind: The eyes become fixed on the ceiling, the teeth clenched, the back arched and rigid, the limbs also contracted and set. There is incapability of speaking, but the patient knows what is going on. The skin is deadly cold. The attacks last from an hour to an hour and a half. The patient was found to be suffering from acute antelexion of the uterus. She was treated for this by a cradle pessary and occasional use of the sound. After three months the attacks had become greatly lessened in frequency. Half a year elapsed before the patient was next seen. The attacks had disappeared. A slight sensation of faintness only was occasionally observed at times. A year later still free from attacks. The antelexion of the uterus was difficult to cure in this case, but the final result was satisfactory.

CASE XIV. *Retroversion and Slight Flexion of the Uterus; Convulsive Attacks about Menstrual Periods.*—Miss —, æt. 29. Four years ago began to suffer from convulsive attacks, which always came on about the second day of the menstrual period. She remains insensible about half an hour (once for two days) after the attack. Has had five attacks. Has had much exertion in lifting and nursing. Uterus markedly retroverted and a little flexed. Treated by pessary. Cure.

CASE XV. *Acute Retroflexion of the Uterus; Severe Hysterical Attacks.*—Mrs. —, æt. 38. Has had no children. About one year ago began to have severe hysterical attacks, with screaming and much excitement. Occasionally every word excites the sensation of an attack coming on. For-

merly could walk well. Walking power now very much more limited.

Uterus acutely retroflexed, extremely sensitive to the touch. Treated by the sound and by a Hodge pessary. One year afterward she stated that she had had no more attacks, and was in all respects feeling quite well and strong.

CASE XVI. *Uterus Anteverted; Hysterical Attacks*.—Mrs. —, æt. 30. Four children. Hysterical attacks and pain after exertion. Uterus anteverted, wearing a Hodge pessary, the over-action of which has produced anteversion of the uterus, or exaggerated it.

CASE XVII. *Anteflexion of the Uterus; Hysterical Attacks*.—Mrs. —, æt. 24. Three children. Two years ago began to have hysterical attacks, with pains in the head, and dullness. Since last confinement, five months ago, the attacks are more frequent. The patient has a frequent choking sensation. She is obliged to stand a good deal.

Uterus low down, anteflexed; fundus close to symphysis pubis.

Treated by a cradle pessary. Cure.

CASE XVIII. *Anteflexion of the Uterus; Hysterical Attacks and Severe Nausea*.—Miss —, æt. 33. Five years ago lifted a heavy weight, and fell ill in consequence. Two years ago began to suffer from nausea. The sickness has been almost incessant ever since. Dysmenorrhœa also of late. For the last four months has been subject to fits of insensibility. The head feels strange; she lies down and knows no more for some time—once for as long as twenty-four hours. When she returns to herself has much aching of the jaws. Uterus very low down, large and anteflexed. There is great tenderness over right ovarian region. Very severe and troublesome nausea almost constantly present. Treated by a cradle pessary. Great improvement, sickness subsided, attacks ceased. Pessary removed one year and nine months later, when patient seemed well. Five months later return of symptoms and re-employment of cradle pessary.*

* The following case, related by Boivin and Duges (translation by Heming, p. 109), very probably deserves to be classified with those in the above series:

"*Anteflexion Supposed to be Congenital*.—M. A. B., æt. 18, of small stature, died after repeated attacks of epilepsy. Ex. slight inflammation of intestines. The uterus was so bent toward its middle, that the posterior surface of its body appeared in front resting upon the neck

The cases above related, coupled with others which I have seen, but of which I possess no sufficiently good records, have induced me very decidedly to come to the conclusion that it is the uterus which is the seat of the irritation, which issues in the hysterical attack. The manner in which the attacks originated, the circumstances attending the subsequent occurrence of them, the relief, and in many cases the instantaneous manner in which the attacks ceased when the uterus was straightened and put into its proper position in the pelvis,—these facts and observations, repeated over and over again, have forced this conclusion upon me.

The occurrence of hysterical paroxysms was, in the large majority of cases which I have witnessed and investigated, apparently brought on by some physical exertion. This is a most important circumstance. The importance of it arises from the following considerations: When the uterus is in a state of flexion, either forward or backward, the act of lifting, or stooping, or over-walking, or standing, has the effect of intensifying the flexion; the uterus is pushed lower in the pelvis, and its curvature becomes exaggerated. This is a fact abundantly borne out by clinical observation. The result of increase of the flexion of the uterus is to increase the congestion; there is in such cases congestion to begin with, but the physical exertion leads to its very considerable aggravation, and when the aggravation reaches a certain point the hysterical attack appears.

On the other hand, by taking measures such as are adapted to prevent the aggravation of an existing flexion—that is to say, by keeping the patient in a horizontal position—the attacks are not found to occur, or, at all events, become much diminished.

Observation shows that the dorsal position prevents hysterical attacks due to ante flexion, but that the prone position is most effective when the case is one of retro flexion. These facts are most interesting. Out of the eighteen cases related, twelve were cases of ante flexion, from which it appears that the most common cause of

of the bladder, and the fundus uteri was turned toward the anterior paries of the vagina, although the os uteri had retained its natural situation and form. If brought into its natural position it immediately returned to the former one. Tissue on section blackish and very dense. Cervix livid gray. Interior of cavity dusky black. Length on convex surface two and a half inches; on anterior surface fourteen lines."

hysterical attacks is ante flexion of the uterus. One of the principal reasons why the mechanism of the production of the hysterical paroxysm has so long escaped recognition is, I believe, the fact that ante flexion of the uterus has, up to quite a recent period, been hardly allowed a place in nosology. I cannot stop here to explain this latter circumstance; but I take the opportunity of saying that, having for many years closely observed and investigated the mechanical diseases of the uterus, I have long been impressed with the grave nature and frequency of the symptoms to which this variety of distortion and displacement of the uterus is capable of giving rise.

I may be permitted, in conclusion, to make a few remarks on the ovarian theory as to the origin of the attacks, which has of late been so warmly advocated by Professor Charcot.

It is well known to gynæcologists that the ovary is sometimes found to be prolapsed, and can be readily felt in the Douglas pouch. It is there subjected to great pressure and irritation, and much pain and suffering is found in such cases. These cases would therefore be supposed to be of all others those in which hysterical attacks should occur, supposing that the ovaries are the principal point of origin. I do not deny that such dislocation of the ovary may cause hysterical attacks; but I have, at all events, not seen attacks of hysteria in such cases of dislocated ovary, unless accompanied also by acute retro flexion of the uterus. Retro flexion and dislocation of the ovary are not seldom associated.

Further, in the cases of hysteria above related, where flexion of the uterus was undoubtedly present, the ovaries were not found to be particularly sensitive, nor was there evidence of ovarian disease.

The fact that pain is frequently felt in the ovarian region in cases of hysteria, on which much stress has been laid by those who adopt the ovarian theory, is explained by the flexion of the uterus. Having made many observations on this subject, I am able to state that pain in the ovarian region is a very common symptom in cases of uterine flexion. It appears to be due to the fact that the flexion is generally a little to one side, the uterus not being usually bent directly backward or forward, but most usually a little to one side or the other.

Two series of facts described by Professor Charcot are adduced by him to support the theory that the ovary is

the *point de départ* of the paroxysm in hysteria and hysterio-epilepsy.

In the first place, Charcot states that pressure over the lateral hypogastric region has the following effect: "Pressure there produces not only pain, but a sensation accompanied by all or some of the phenomena of the aura hysterica. Thus, methodical compression of the ovary determines the production of the aura, or sometimes even a perfect hysterical seizure."

In the next place, Charcot states that a more energetic compression is capable of stopping the development of the attack when beginning, or even of cutting it short when the evolution of the convulsive accidents is more or less advanced.

The method adopted by Professor Charcot to effect the more severe compression is as follows:

"The patient should be horizontal in dorsal decubitus on the floor, or a mattress. The physician then, kneeling on one knee, presses the closed hand, or fist, into that iliac fossa which he had previously learned to regard as the habitual seat of the ovarian pain. At first much force is required to overcome the abdominal muscles. Pressure then produces numerous and noisy attempts to swallow. Consciousness returns almost at the same time. Now the woman moans and weeps, says she feels relief, or that you are hurting her. By continuing the pressure two, three, or four minutes, you are almost certain to find all the phenomena of the seizure to disappear as if by magic. When the abdominal resistance is overcome, pressure by the two first fingers is sufficient."*

It may be desirable to consider how far the results of Professor Charcot obtained by pressure, as above described, over the ovarian region, are antagonistic, or the reverse, to the uterine theory above formulated, as to the cause of the paroxysm in hysteria and hysterio-epilepsy.

The pressure employed by Professor Charcot is a very forcible pressure made in the hypogastric lateral region, calculated, first of all, to abolish the resistance of the abdominal muscles—a resistance considerable in many cases; and, secondly, to produce a real compressing influence on the organs which lie in the pelvis. The incidence of this pressure, which is effected by the fist, or by an apparatus

* See New Syd. Soc. Trans. of Charcot's "Lectures," p. 27.

specially contrived for the purpose, is rather widely spread, and it is such that it must almost of necessity affect not only the ovary, but first the uterus, and secondly the ovary. Doubtless when the resistance of the abdominal muscles is overcome, the pressure can be more particularly pointed on, or directed toward, the ovary, or concentrated on this latter organ. But at the same time it is almost inevitable that the uterus should be greatly affected by this pressure, and must receive a considerable portion of it. Considering for a moment the operation of such pressure on the uterus, the effect might be different, according to the position of the uterus at the time. Thus, if the uterus were much anteverted, the result would, or might, be to push it still lower in the pelvis, and to increase the anteversion; but the action of the pressure would be further to express the blood from the uterine vessels, and to diminish any congestion of the organ existing at the time. If the pressure were made directly behind the pubic bone, the effect might, on the other hand, be such as to push the uterus backward, and, in the next place, to drive the blood out of its tissues. A further effect of the pressure would be, in any case, to diminish the flow of blood to both uterus and ovaries alike, by the general action of the compressing power on the blood-vessels of the pelvic organs.

So far as I am able to judge, therefore, it would appear that the operation termed ovarian compression is really entitled to be denominated "uterine," quite as much, perhaps even more, than it is to be described as ovarian compression.

But this is not all. Professor Charcot states that slight pressure of the kind above described often brings on pain and symptoms of the hysterical aura—that is to say, the attack is capable of being brought on by slight pressure and relieved by severe pressure. All this is quite in unison with the argument which I just advanced, for supposing a version or flexion to exist, the slight pressure above the pubes, such as Charcot describes, would undoubtedly at first intensify the displacement. The slight pressure would temporarily thus so act on the uterus as to induce the attack.

In conclusion, I would express my conviction that the escape from the indefiniteness of view, which up to the present time has characterized the various opinions entertained as to the nature of "hysteria," is to be found in the

frank adoption of the term "hysterical" in its most literal sense; and that in the future the uterus will be held to be in the main responsible for those various manifestations and disorders denominated "hysterical."

General Conclusions as to the Interpretation of Hysterical Phenomena.—The cases which have been described in the previous pages offer evidence as to the operation of certain conditions of the uterus as exciting causes of the attacks in which convulsive phenomena are witnessed. And it is reasonable to suppose that in the slighter forms of hysterical disorder the influence at work is of an analogous nature.

It is extremely probable that the predisposing condition is always a state of defective nutrition of the nerve centres, for the individuals affected for the most part present other strong evidence of general feebleness, weakness, and want of power. Moreover, there is usually a history of previous inappetency, and such quantitative defects in the dietary as would be likely to give rise to a starved condition of the frame generally. Together with this weak condition of the nervous centres there is often a feeble condition of the uterus (see chapter on Undue Softness of the Uterus).

As to the mechanism of the milder manifestations it may be reasonably assumed that when they result from mere emotional excitement the affection is primary; probably an unduly weak and irritable state of the nerve centres. But when the manifestations occur as the result of over-exertion, it is more probable *à priori* that they are the result of a reflex action. This reflex action takes its departure, according to the results of my experience, most frequently in the uterus. How this occurs may be explained as follows:

When the uterus is physically weak, its tissues are often found to be soft and unduly pliable, and under such circumstances a slight physical exertion is capable of producing an alteration in its shape. This alteration of shape is attended with compression of the nerves of the uterus. This compression of the uterine nerves is capable of exciting reflex manifestations.

Thus, in a weakly woman, lifting a weight, standing too long, or any kind of exertion capable of putting a physical strain on the too pliable uterus, may excite hysterical manifestations. In point of fact it can be shown that the more severe hysterical manifestations due to a reflex mechanism

are usually associated with an habitually flexed state of the uterus. We are now, however, speaking of the cases which are of a more simple character; but careful inquiry into the facts of cases will show that the above explanation is at all events compatible with those facts.

The presence of an "hysterical" tendency means, according to the explanations above given, that the individual is physically weak, but not necessarily fanciful. These physically weak individuals are also liable to suffer from various pains and inconveniences referable to the uterus; and it has come to pass that in very many instances these other sufferings have been regarded as imaginary or fanciful *because* they are observed in "hysterical" patients. But with the foregoing explanation, the reason for the association is obvious enough. In point of fact these sufferings, which are so frequently thought to be fanciful, are real, and their meaning is that the uterus is in a state of irritation and that the basis of this suffering is a physically weak condition of that organ.

Dr. Gowers's remarks on the "ovarian compression" so largely practiced in Paris are interesting. Ovarian compression "fails to produce a marked effect in patients in this country, although ovarian tenderness is by no means uncommon. In such patients evident distress, choking sensations, and even the feeling by which attacks are heralded, may be produced by compression of the tender ovary, but I have never known such pressure to produce an actual attack."

Regarding the connection between disorders of the sexual organs and convulsive attacks, Dr. Gowers makes the following remarks: "Retarded or absent menstruation coincided with the first fits in a large number of the cases which commenced in girls between fourteen and seventeen, but the difficulty in determining the exact causal relationship between the two conditions is very great. Epilepsy once set up in such cases, the subsequent establishment of regular menstruation appears to exercise very little influence upon the fits" (p. 31).

And later on, speaking of the treatment, the same writer says: "Recorded cases, in which the attacks have ceased when a uterine displacement was rectified, have not been paralleled by any facts which have come under my personal observation" (p. 300).

Respecting the truth of the theory now put forward con-

firmatory evidence is by no means wanting. Niemeyer, whose facts are generally considered as reliable, and who was certainly not disposed to attach an undue importance to these special uterine disorders, says that flexions more than any other of the disorders of the uterus give rise to hysteria. This is an exceedingly valuable statement coming as it does from a distinguished modern pathologist. It is, in fact, a piece of evidence from the opposite camp, so to speak, and is important as bearing out my view of the case. The further arguments I submit are as follows: In the first place, there is the *à priori* argument. It is reasonable to suppose that compression of the uterine tissues, involving as it must do compression of the nervous filaments, may produce such irritation as to give rise to convulsions. It does not, however, at all follow that such compression will always produce convulsions. It would be as reasonable to find fault with the theory that convulsions are sometimes due to the presence of worms in the intestinal canal, because these entozoa do not invariably give rise to convulsions. No one, however, doubts the connection between these two events. It is therefore not a sufficient reply to this statement to say, that if this theory were true, convulsions would always occur when compression of the uterine tissues is produced. The clinical arguments in favor of this view seem to me to be overwhelming. I have seen a considerable number of cases in the course of the past few years where convulsions of the kind described have actually ceased when the flexed uterus was so treated as to diminish or remove the compression existing at the seat of the flexion. And in all such cases I have observed that this kind of treatment produced a very marked effect even when it did not succeed in at once removing the attacks. This is an important argument. Another is, that the position of the body, or any exertion which has a tendency to aggravate the flexion, invariably aggravates and intensifies the convulsions. I could relate many instances where this interesting fact was observed. Thus, in one case of severe retroflexion, giving rise to convulsions, the attacks instantly ceased when the patient was made to lie on her face, this improvement being in that case effected without any other mechanical treatment of the uterus whatever. In another case, that of the wife of an Indian officer, in whom the convulsive attacks were produced by ante flexion of the uterus, they invariably occurred when the patient was sit-

ting upright at the dinner table, that being the only time of the day when they did occur. The sitting position increased the anteflexion, and thus gave rise to the convulsions. A further argument is the effect of measures having a more direct curative action upon the flexion, and which have been employed with the idea of restoring the uterus to its proper shape. I mean the employment of the sound and the use of pessaries in order to restore the uterus to its true natural shape. I now state that the effect of these measures has been, clinically, to give proofs, over and over again, of the validity of the position which has been taken up, inasmuch as the convulsions, or the tendency to convulsions, have always been influenced favorably in direct proportion to the degree in which the flexion has been favorably acted upon. Another argument which I have to submit is the result of very careful exploration of the uterus in many of these cases, an exploration made by the finger and the sound. It will be found in these cases that the introduction of the sound, if properly managed, gives no pain to the patient until it reaches the situation where the flexion exists. When the sound has been introduced a distance of one inch into the cervical canal its point comes in contact with that part of the uterine wall which is the seat of the compression; and invariably it is found, under these circumstances, that the patient experiences very great pain when that part is touched by the point of the sound. After the point has passed through this strait, and when passed beyond the site of the flexion there is no more pain felt by the patient. But the mere touch of the point of the sound on the uterus in this situation always gives rise to extreme pain and extreme sensitiveness. It requires that the examination should be conducted with great care in order to give this result, because it generally happens in these cases that the uterus as a whole is also sensitive to the touch. But by carefully conducting the examination it is practicable to define those parts which are so very sensitive to the touch.

TREATMENT.

The indications for the treatment of hysteria are two-fold: *First*, to remove or ameliorate the susceptibility of the patient to impressions from without or from within, and, *secondly*, to remove the exciting cause, whatever that may be.

On the subject of the *general treatment* much has been already said in former pages as to the effects of a systematic attention to the nourishment and feeding of patients whose general condition is one of feebleness and impaired nutritional activity. The very great success which has attended the treatment of hysterical cases by what is now known as the "Weir Mitchell system" has been described, and its *rationale* particularized in a former chapter (see page 132, vol. i.). The systematic feeding associated with baths, massage, electricity, etc., has been attended with the best effects in producing a change from excessive feebleness to a condition of vigor and general nutritional activity, and there can be no doubt that the treatment in question is based on sound physiological and therapeutical principles. The so-called "hysterical" subject is frequently simply "weak," and will be improved by all measures having an invigorating tendency.

As preventive measures, fresh air, moderate exercise, nutritious food, occupation and exercise of the mind in some useful pursuit, are undoubtedly to be recommended. In regard to bodily exercise, caution is necessary, for much mischief may result from over-exertion in a weakly subject. The emotional faculties should remain in abeyance so far as practicable.

Marriage is on the whole to be recommended, but marriage is liable to increase the malady unless pregnancy occurs. My experience is that the condition of the uterus which produces hysteria is often the cause of sterility after marriage.

If the hysteria has nothing to do with the uterus and no uterine lesion is discoverable, general treatment only will be applicable.

But when the uterus is affected with a decided alteration of shape, general treatment, though not without its advantages, will very frequently be quite powerless in removing the liability to the disease. The means of remedying these alterations in the shape of the uterus which have been already described (see Treatment of Flexions) must then be put into requisition. The shape of the uterus must be restored, and the organ maintained in a state of rest. The treatment has yet to be tested by other observers, but what I have seen of it in my own practice enables me to affirm that when it is made impossible by mechanical or other treatment for the uterus to become further bent (a

previous rectification of its shape having been properly carried out), the symptoms do not recur.

Palliative Measures.—Distressing symptoms presented by hysterical patients, and for which relief is most urgently sought, are, flatulence, headache, and pain in the side. The flatulence is best treated by cordials; ginger, sal-volatile, and ether may be given for this purpose in combination. Relief in this way is of course only temporary, and the dyspepsia, on which the flatulence depends, must be treated by suitable measures. An assafoetida injection has been found to afford temporary relief in some cases. Opiate liniments are often useful; counter-irritation of the whole surface of the skin by flesh-brushes is very serviceable in the general treatment of hysterical patients.

In reference to headache, the same remarks as to the necessity for general treatment hold good. I have found both opiate and chloroform liniments of great service. Bark, in the form of the "liquor cinchonæ," is a valuable remedy in many cases where there is severe headache associated with anæmia. Cannabis indica, ether, valerian, and other antispasmodics, are often also necessary in these cases.

Paroxysms of hysterical convulsions must be guarded against by preventing the ordinary exciting cause, whatever that may be. For the relief of the paroxysm itself, a variety of methods have been recommended. Dashing of cold water in the face is one of the most efficacious, though, for a variety of reasons, it cannot always be adopted. Chloroform inhalation is very effective. Application of burnt feathers or other strongly smelling substances to the nostrils is often efficacious. Valerian, castoreum, assafoetida, ether, musk, camphor, are the drugs most commonly had recourse to, either in cases where the paroxysm is imminent, or, when it has ceased, with the view of preventing its recurrence. These remedies may be given singly, or two or more may be combined. Injections of cold water into the stomach were found very efficacious in arresting the paroxysm by Cruveilhier, and also by Dr. Ashwell. Injection of iced water into the rectum has been also recommended. Dr. Hare has introduced the plan of arresting the paroxysm by temporary suffocation of the patient. Pressure in the inguinal regions (ovarian compression), practiced by Negrier, and more recently by Charcot, is a procedure which has been already discussed (see p. 157).

CHAPTER XXXIX.

HYSTERO-NEUROSES (*continued*)—MENTAL DISORDER DUE TO REFLEX UTERINE IRRITATION—CEPHALALGIA.

Mental Disturbances sometimes produced by Uterine Irritation—Illustrative Cases.

CEPHALALGIA.—Occasional Severe Headache due to Disorders of the Uterus.

Experience has shown that irritation starting from the uterus is capable of exciting disturbances in the mental condition of the patient. The irritation acts in a reflex manner upon the cerebrum, and gives rise to marked mental disorder in certain cases.

Dr. Engelmann,* in his essay on the hystero-neuroses, describes cases of this kind. He selects three—one of a series of cases related by Meyer: 1. A case of melancholia, with anteversion, uterine congestion, and erosions. 2. A case of hypochondria, delusions, masturbation, anteversion, chronic metritis. 3. Melancholic depression, with delusions, in a patient of 21, during her second childbed. [This last case, however, hardly belongs to the category now under consideration.] Engelmann selects certain of Dr. Fordyce Barker's cases: viz., two cases of insanity, the result of menorrhagia. Engelmann has observed "displacement of the uterus, but not as a cause of insanity," and reposition of the extremely retroverted and large organ was followed by immediate disappearance of the mental disturbance and very remarkable relief.

Dr. Percy Boulton† has written on the same subject, and points out that reflex disorders of uterine origin frequently occur and are not recognized—*e.g.*, periodic headaches, neuralgia, depression of spirits, epilepsy, melancholia.

There are here two factors to be considered—the cerebrum and the uterus. The condition of the cerebrum is no doubt an abnormal one, or the uterine irritation would not have the effect of so readily disturbing its functions. That condition of the cerebrum is in all probability essentially one of debility. Speaking of the predisposing causes of

* *Loc. cit.*

† *Obst. Journ.*, No. 23, p. 697.

mental disease, Dr. James Adam* says it will very often be found that "exhaustion," in one or other of its many forms, lies at the root of the evil, and prepares the way for its onset—exhaustion induced by an infinite variety of means, but having as its climax impaired nutrition and exhaustion of the cerebral centre itself; which, being thus imperfectly nourished and exhausted, produces none of the ordinary ideas or modes of thinking incidental to health.

It is possible that reflex irritation on the side of the uterus producing mental disturbance occurs in the class of cases above described by Dr. Adam. The instances which have come under my notice have been observed where exhausting ideas or influences have been at work.

I subjoin particulars of some cases illustrative of the foregoing remarks, which have fallen under my own notice:

CASE I. *Melancholia due to Anteversion of the Uterus.*—Mrs. —, æt. 30. Married nine years. Had first two children, then a miscarriage; and after three years' interval, another child. Six weeks after birth of this last child, three and a half years ago, felt hysterical after breakfast, and was very weak and ill. Eight months afterward, a miscarriage. She got about and excited herself soon afterward, and became ill. An attack of rheumatism supervened. She had a sensation that "she must go out of her mind." This continued till next pregnancy. Her last child was born one and a quarter years ago. Since that occurrence, she has been liable to sudden attacks of a peculiar mental feeling. She has at these times a dread lest she should say wrong things. She has pain in the head for weeks together, feels excited and weak. She is suffering from anteversion of the uterus, which her medical attendant has detected, and he sends her to me, in order to ascertain if the uterine condition has anything to do with the head symptoms. On examination, decided anteversion found to exist. Treated by a cradle pessary. Perfect cure of the head symptoms. Subsequent pregnancy, and delivery at full time.

CASE II. *Melancholia; Menorrhagia; Retroflexion of the Uterus.*—Mrs. —, æt. 30. Married five years. Has been under the care of a distinguished physician, Dr. Thomas, in New York. Has had two children; last nearly two years ago. After the first labor, the patient overwalked herself

* Report of Crichton Royal Institution, Dumfries, for 1880, p. 14.

and became ill; the periods being very profuse. One month after the second labor she felt that the nervous system was out of order; she heard noises in the head, could not work, or read, or write, or attend to affairs. Menstruation became very profuse; she was in constant dread of an "attack" of some kind. Has been wearing a retroflexion pessary since that time, and is now better.

CASE III. *Mental Excitement at Menstrual Epochs; Anteversion.*—Miss —, æt. 34. Liable to attacks of mental excitement, which occur when menstruation is delayed or does not appear. The irregularity of menstruation, and the liability to mental excitement date from a period fifteen years ago; and the cause of the illness seems to have been a long ride on horseback. The uterus is soft, and anteverted to a slight extent.

CASE IV. *Melancholia; Anteversion of the Uterus.*—Mrs. —, æt. 37. Has had nine labors, six of which were premature. Suffers from a constant feeling of melancholy, distressing both to herself and to her friends. The uterus is large and anteverted. Treated by a cradle pessary. Removal of the melancholia.

CASE V. *Mental Excitement; Extreme Exhaustion; Anteversion of the Uterus.*—Mrs. —, æt. 20. Has had two children. Suffered from great weakness, and inability to take food. Great mental excitement. Anteversion of the uterus. The case was one of severe chronic starvation. Very great patience and care were required in this case, but a complete cure from a very alarming condition was finally obtained.

CASE VI. *Mental Disturbance; Retroflexion of the Uterus.*—Miss —, æt. 29. Was unable to walk well between the ages of 13 and 18. Had to lift weights and exert herself a good deal. Suffers from low spirits and depression, and has periods of exacerbation of this feeling, during which she writes letters of an abusive character to her relations. The uterus is in a state of acute retroflexion, and the history shows that the displacement has existed for some years. She is now able to walk easily. A complete cure of all the symptoms followed; treatment by means of a Hodge pessary.

CASE VII. *Derangement of Thoughts; Retroflexion of the Uterus.*—Mrs. —, æt. 42. Has had one child. Has pain in walking, and "her thoughts get deranged" by walking; so much so that it is a serious trouble to her. Uterus retroverted, low down, rather small in size.

CASE VIII. *Melancholia; Antelexion of the Uterus.*—Miss —, æt. 38. For last year or more felt very low and desponding, and as if she should go out of her mind. The head is painful. Five years ago, had for a considerable time much exertion. Uterus low down, antelexed.

CASE IX. *Great Mental Depression; Exhaustion; Anteversion of the Uterus.*—Mrs. —, æt. 35. Two children. Suffered great fatigue some months ago, nursing a sick child. Since that time very ill. Extreme depression of spirits, worse in the evening. Walking gives great pain in the back. Uterus soft, swollen, much antelexed. Considerable relief followed treatment, but the soft condition of the uterus was only remedied after a considerable interval of time.

CEPHALALGIA RESULTING FROM UTERINE IRRITATION.

Very intense cephalalgia is occasionally observed in connection with long-standing flexion of the uterus. This symptom is not very common, at all events in this degree of intensity; but the circumstances of certain cases which have come under my notice were such as to show in a very positive manner that the connection between the symptom in question and the cause assigned was really one of cause and effect.

The cephalalgia may be so intense that the sufferer is sometimes confined to a darkened room for days together, unable to bear light, and hardly tolerating being even spoken to. And I have known a case (one of chronic severe retroflexion) in which this state of things had reached such an extent that the patient hardly ever left her room at all.

Another case may be mentioned—that of a young lady who was liable to exceedingly severe cephalalgia, lasting sometimes three days at once. She was affected with antelexion of the uterus, the uterus in a state of mal-nutrition, and very soft to the touch. She entirely lost the headache while under treatment for nearly two years by a uterine stem. The symptom returned after the removal of the stem, and after some months' trial by other measures it was found necessary to adopt the stem treatment a second time in order to give her relief.

Severe cephalalgia is sometimes observed in cases of fibroid tumor of the uterus, and I have seen cases in which the symptom in question was most distressing, and very intractable to treatment of any kind. But it does not ap-

pear that cephalalgia is more liable to occur where the fibroid tumor is of large size; on the contrary, in the cases where the symptom has been most intense the tumor was of inconsiderable magnitude.

CHAPTER XL.

PERI-UTERINE HÆMATOCELE.

Pathology of the Subject—Positions in which the Hæmorrhage occurs, and Symptoms attending its Occurrence—Intra-peritoneal, Extra-peritoneal, Causes of Peri-uterine Hæmatocele enumerated—Results.

DIAGNOSIS.

TREATMENT.—Means of arresting the Menorrhagia—Treatment of Pain, Collapse, etc.—Question of Puncture.

The terms "pelvic hæmatocele," "peri-uterine hæmatocele," "retro-uterine hæmatocele," "pelvic hæmatoma," have been used to designate an effusion of blood in the neighborhood of the uterus, giving rise to formation of a tumor. The occurrence of hæmorrhage in and amongst the pelvic viscera in women, although spoken of by several of the older authors, has only within the last thirty years received that amount of attention which its importance deserves. To Bernutz,* Nélaton, and Voisin of Paris, the profession is indebted for first indicating and explaining the nature, course, and symptoms of this affection. In this country, Dr. Tilt was the first to draw attention to the matter; Dr. West has written an admirable account of it in his work on "Diseases of Women;" Sir J. Y. Simpson described it, in his ordinary felicitous manner, in his "Clinical Lectures." The works of Voisin† and Bernutz,‡ an admirable essay on the subject by Dr. M'Clintock,§ the valuable observations of Dr. Madge,|| Dr. Matthews Duncan,¶ and a very complete and exhaustive essay by Dr.

* See "Arch. Gén. de Méd." 1848.

† "De l'Hématocèle rétro-utérine, et des Epanchements sanguins non-encystés de la Cavité Péritonéale du Petit Bassin." Paris, 1860.

‡ "Clinique Médicale sur les Maladies des Femmes," vol. i. 1860. Translated by Dr. Meadows for New Syd. Soc. 1866-7.

§ "Clinical Memoirs on Diseases of Women." Dublin, 1863.

|| "Obst. Trans.." vol. iii.

¶ *Edin. Med. Journ.* Nov., 1862.

Tuckwell,* comprising an analysis of ninety-eight published cases, may be referred to for information on this interesting subject. Dr. Savage, Dr. Barnes, Dr. Meadows, Dr. Pallen may be mentioned among those who have more recently published valuable observations thereon. The views at first entertained and expressed respecting this newly-discovered pathological condition were somewhat opposed to each other, and there is still difference of opinion as to the nature, seat, and mode of origin of the hæmorrhage, although the difference is really less than it has been represented to be.

Bernutz, whose claims to be considered as the first modern observer and expounder of this pathological condition stand before all others, rightly insisted on the mischief which has arisen from treating the effusion, clot, or tumor, as a sort of entity, and of the confusion which has arisen from speaking of pelvic hæmatocele or uterine hæmatocele as a disease *per se*; whereas it is really but a symptom, a consequence, an effect, or an accident, as the case may be, of exceedingly varying conditions. The term "hæmatocele" must be understood to be a convenient term, indicating simply effused blood; and if we use the double term "peri-uterine hæmatocele," which is on the whole a convenient one, it must be understood to imply effusion of blood in the neighborhood of the uterus. It will so be used in this place, and without restriction of any kind as to the precise seat of the effusion.

The circumstances leading to the pouring out of blood in the neighborhood of the uterus will be presently mentioned; but, in the first place, it will be advisable to point out the anatomical positions in which hæmorrhage is liable to occur.

INTRA-PERITONEAL HÆMORRHAGE.

Hæmorrhage may take place into the peritoneal cavity, the blood collecting in the pelvis, and lying on and between the pelvic viscera; and the blood may come from some vessel in the pelvis itself, or from a vessel situated in the abdominal cavity. The blood collects in the pelvic cavity, which it fills more or less completely, according to the quantity poured out. If the effusion proceed rapidly, it

* "On Effusions of Blood in the Neighborhood of the Uterus." Oxford, 1864.

may kill the patient before coagulation occurs. If the effusion take place slowly, the blood effused generally coagulates, and the coagulum becomes limited to a certain situation by inflammatory products, or by the free border of the coagulum only. In this case it is spoken of as encysted; but, under some circumstances, no such limitation of the blood occurs. It will be obvious that, when the blood has coagulated, the coagulum will form a tumor having certain physical characters, and which, if the coagulum be in the pelvic cavity, may be felt through the vaginal walls on digital examination. If the examination be made early, fluctuation may be perceivable, but it is often difficult to make out fluctuation satisfactorily. If the examination be made soon after the coagulation has occurred, the tumor will be soft and ill-defined, and the more so as it will be probably at this time surrounded by serum not yet absorbed. If the examination be made later, the tumor will be harder and more resistant. Later still, it will be found either to have become reduced in size, or to have undergone a softening process or liquefaction. The blood drawn off by operation has a syrupy consistence and a peculiar odor, compared by Dr. Matthews Duncan to that of faded and slightly decomposing flowers. It is obvious that the physical aspects of the tumor, as felt through the vaginal wall, will vary according to the amount of blood effused and the quickness with which this occurs. A large and sudden hæmorrhage would leave behind it a clot filling the whole pelvic cavity, dipping down behind and at the sides of the uterus, as far as the peritoneum extends. The uterus would in such a case be felt to be embedded in a mass of semi-solid substance. On the other hand, a small hæmorrhage would give rise to a coagulum, which might be felt only in one part of the pelvis—*e.g.*, behind the uterus, in the Douglas fossa ("retro-uterine hæmatocele"). The effect produced on the patient by hæmorrhage into the peritoneal cavity appears to vary very considerably. In one case—and this is perhaps the rule—it sets up violent inflammatory action; in another, the presence of the blood is better tolerated. The effect on the patient *quoad* the loss of blood necessarily varies according to the amount lost and the ability of the patient at that particular time to bear losses of blood of any kind. It is almost unnecessary to point out that when a large coagulum occupies the pelvic cavity it gives rise to the "pressure" signs observed in the

case of other pelvic tumors, such as difficult defæcation, difficult micturition, a sense of fulness, pains in the lower extremities, etc.

It may or may not be the case, as Dr. Barnes contends, that very slight hæmorrhages into the pelvic peritoneal cavity occur frequently, and are clinically unrecognized. When, however, the hæmorrhage is considerable, the symptoms produced are of a peculiar kind, most alarming, most intense in character. The symptoms are those of hæmorrhage and of peritonitis combined. Thus the patient becomes deadly faint, and at the same time complains of an agonizing pain in the lower part of the abdomen. The fainting is more or less continuous, but it is greatly more intense at intervals. And so with the pain, this being generally continuous, but liable to exacerbation to an extreme degree at times. It is characteristic of the attack that it begins suddenly, and most frequently it happens that the attack is coincident with a menstrual period. There may be, adopting Dr. M'Clintock's arrangement of the symptomatology, three modes of invasion: (1) The sudden and acute form; (2) A form less severe and overwhelming in its effects, life not being so evidently threatened; (3) A sort of chronic form, the symptoms being developed gradually or in succession.

EXTRA-PERITONEAL PELVIC HÆMORRHAGE.

The term "thrombus" has for some time been used to designate a blood coagulum in the cellular tissue of the labia, or near the external outlet of the organs of generation; and the term is obviously quite as applicable to the coagulum, resulting from hæmorrhages taking place higher up—that is to say, in the cellular tissue near the uterus, in the broad ligaments, etc. Thrombus of the external generative organs has for a long time been well known, but it is not so with the thrombi of the internal generative organs. It is now known that an effusion of blood near the uterus in the situations above indicated is not uncommon. By some authors the effusion (or its coagulum) is spoken of as a "thrombus;" by others it is considered as a "peri-uterine hæmatocele." Thus Bernutz only admits intra-peritoneal hæmorrhages as causes of hæmatocele, and considers extra-peritoneal hæmorrhages as instances of thrombus. This author believes that the extra peritoneal form of hæmor-

rhage is comparatively rare. It is more convenient, however, to discard this word "thrombus," and to apply the term "peri-uterine hæmatocele" to hæmorrhages having this anatomical position. If the nosology of the subject were to be considered *de novo*, there would be much to be said in favor of a different nomenclature.

The seat of the extra-peritoneal hæmorrhage now under consideration is the connective tissue around the uterus and ovaries and pelvic viscera generally. The position and shape of the tumor resulting from coagulation of blood so effused necessarily varies according to the precise situation

FIG. 162.*



of the bleeding vessel. Thus if the bleeding vessel be in front of the uterus, the tumor will likewise be in front; and if the bleeding continue, the coagulum may extend from this point laterally on each side. If the bleeding vessel be behind the uterus, the coagulum will be there evident. The pelvic viscera become dislocated by the tumor resulting from the coagulation, to a degree necessarily dependent on the extent of the hæmorrhage. The tumor may extend from the pelvis high up into the abdomen. The physical character of the tumor, as regards hardness, softness, etc., is subject to variations of the same kind, as detailed in the case of extra-peritoneal hæmorrhage. In fact, so nearly do

* Fig. 162 gives an outline of the tumor in a case (P. H.) in University College Hospital, where the hæmorrhagic effusion was apparently extra-peritoneal.

the physical characters presented by the tumor in extra- and intra-peritoneal hæmorrhage agree, that it is hardly possible during life to distinguish them. The tumor in both cases may rise high above the pelvis into the abdomen; in the extra-peritoneal form it may be extremely large. The symptoms do not, as far as can be ascertained, differ in the two cases; and that this is true may be judged of by the fact that it is disputed whether in the majority of cases the hæmorrhage is intra- or extra-peritoneal. In the extra-peritoneal hæmatocele the tumor may reach lower down in the pelvis; an hæmatocele tumor found extending

FIG. 163.*



upward from the vulva into the pelvis would almost certainly be extra-peritoneal;† the reflexions of the peritoneum would prevent such a descent of the tumor in the intra-peritoneal form. With this exception, there appears to be

* Fig. 163 gives a lateral view of the position of the tumor in a case observed in University College Hospital. The effusion was of very considerable extent. The outline of the tumor is strictly correct, but it is not certain whether the blood was intra- or extra-peritoneal. It was diagnosed at the time as extra-peritoneal.

† It is, however, important to recollect, as Dr. Phillips has pointed out, that the retro-uterine pouch descends very low in certain cases, so far, indeed, as to allow an effusion of blood within it to approach more closely than would have been supposed possible to the vulvar aperture. See "Obst. Trans.," vol. xiii., p. 179. Mr. Spencer Wills also considers

hardly anything in the physical characters of the tumors in the two cases to distinguish them. The changes which are observed in the coagulum formed do not materially differ, whether the hæmorrhage be intra- or extra-peritoneal. Absorption, softening, abscess—these are effects which may equally result. A tarry, syrupy condition of the contents is generally observed when the blood is not soon absorbed; the blood corpuscles become shrivelled and contorted, mixed up with pus cells, crystals, patches of pigment, etc. It not unfrequently happens that the tumor, at first small, becomes enlarged at the next menstrual period, from a recurrence of hæmorrhage. Meanwhile, inflammatory action goes on, and during the progress of the combined and simultaneous effusion and inflammation the tumor increases.

We may now pass on to the consideration of the

CAUSES OF PERI-UTERINE HÆMATOCELE.

Under this head will be included all cases in which an effusion of blood takes place in the neighborhood of the uterus so as to constitute a tumor perceivable through the vaginal walls, whether intra- or extra-peritoneal.

Rupture of some one of the Vessels in the Uterine or Ovarian Plexus.—It has been already (see *Phenomena of Menstruation*, p. 45) pointed out that the stratum of blood-vessels forming a thick network immediately external to the uterus undergo, under various circumstances, a kind of erection, in process of which they become greatly distended and enlarged, and that this erection occurs, in all probability, during menstruation, during intercourse, and under other circumstances. Lying beneath the ovary, in the folds of the broad ligament, there is also a rich plexus of vessels—the pampiniform plexus, together with a mass of tortuous vessels now known as the bulb of the ovary; all these vessels are also susceptible of great enlargement. The functional activity of the uterus and ovaries is thus connected with a considerable engorgement and distension of the plexuses of vessels now referred to. The tissues of the uterus and of the ovaries are doubtless congested at the same time; but it is evident that when blood is determined to the internal generative organs, the greater part of it

that the retro-uterine pouch extends lower than has been generally supposed. The life-size drawings in this edition are altered, so as to represent this revised view of the subject.

goes to distend the very large and numerous vessels in the uterine and the pampiniform plexuses and the ovarian bulb respectively.

Dr. Savage * points out the particularly free communication which subsists between the perineal and pelvic venous systems, and that these veins are unprovided with valves. The plexus of veins around the uterus, the vaginal canal, the urethra, and the entrance of the vagina, enjoy free communication one with the other. Dr. Savage points out also the valuable obvious inferences derivable from these considerations, in reference to the etiology and progress of hæmatoceles at the pudendal region. The enormous hæmorrhage sometimes observed in cases of rupture of vaginal varices, etc., is thus intelligibly explained. The number and size of the veins constituting the plexuses of the female generative organs predispose to the occurrence of hæmatoceles.

The foregoing facts have a very important bearing on the present question; they afford us the means of explaining satisfactorily why it is that hæmorrhage is liable to occur in the connective tissue around the uterus, and in the folds of the broad ligament. The clinical facts amply bear out the conclusions deducible from physiological considerations. Rupture of some one of these vessels may be produced by violent or immoderate sexual intercourse, by undue bodily exertion of any kind during menstruation, and probably under other circumstances also. When a vessel has given way, the effusion of blood may be trifling or considerable, according to circumstances. In some cases, the first hæmorrhage is slight, but under reapplication of the exciting cause it recurs, and finally a tumor of considerable size is formed. The seat of the ruptured vessel determines the position of the tumor. When the uterine plexus is implicated, the hæmorrhage is probably almost always extra-peritoneal; but if the rupture affect a vessel in the pampiniform plexus or in the ovarian bulb, the hæmorrhage may readily occur into the peritoneal cavity, although more generally it probably occurs within the folds of the broad ligament, and is extra-peritoneal. The intra-peritoneal cases are most likely to prove fatal, apparently because there is less limit to the amount of hæmorrhage. A "varicose" condition of the vessels in the pampiniform plexus has been noted in some cases where rupture into the

* Plate IV., *loc. cit.*

peritoneal cavity has occurred; and it is rational to infer, in many cases, the existence of a chronic varicose condition of the uterine and ovarian plexus of veins.

It is my impression that, in by far the majority of cases, the source of the hæmorrhage giving rise to the tumors classed under the term "peri-uterine hæmatocele," is that which has been now indicated. On this point, however, there is difference of opinion. In most cases of peri-uterine hæmatocele, the patients recover, and the anatomical evidence is wanting. Dr. Matthews Duncan* has well argued the question from this point of view. His experience has convinced him that the extra-peritoneal form of hæmorrhage is probably a common form of the disease, the clinical facts which have come under his observation having been opposed to the conclusion that an intra-peritoneal seat of the effusion was possible in certain of the cases related. Dr. Duncan admits, in common with other recent authorities, that the effusion is intra-peritoneal in many cases. From Dr. Tuckwell's analysis of published cases it appears that the effusion was intra-peritoneal in thirty-eight out of forty-one cases, where a *post-mortem* examination was made; there can be little doubt, in fact, that in the fatal cases the effusion is far more frequently intra-peritoneal; but this does not of course imply an absolute numerical preponderancy for the intra-peritoneal cases.

Dr. Savage,† to whose careful and beautifully illustrated work on the female generative organs the profession is much indebted, observes: "Viewing the fixed relations of the pelvic peritoneum, which so far as is known are disturbed only through the slow disintegrating process attending the formation of matter, a subperitoneal hæmatoma of large size would appear an impossibility." But it appears to me that the facts known to us in relation to the rapidly occurring, very considerable infiltrations, which are witnessed in the first stage of certain cases of pelvic cellulitis, before there has been any change of a disintegrating character, sufficiently show that these pelvic peritoneal structures do not offer material obstruction to the occurrence of large effusions beneath them. The non-fatal tendency of extra-peritoneal hæmorrhages puts it out of our power to adduce *post-mortem* data, comparable in number to

* "On Uterine Hæmatocele."—*Ed. Med. Journ.*, Nov., 1862.

† *Op. cit.*, Plate vi.

the other class of cases when the hæmorrhage is undoubtedly intra-peritoneal.

Lastly, clinical facts show that a tumor originally seated in the broad ligament or elsewhere may burst into the peritoneum, and secondary hæmorrhage of very serious import may thus occur.

Apoplexy and Rupture of the Ovary.—Under this head may be included some few cases of peri-uterine hæmatocèle. Collections of blood may be formed in the substance of the ovary, probably seated, as a rule, in an enlarged Graafian follicle, and constituting a sort of hæmatic cyst. This cyst may become ruptured, and blood extravasated into the peritoneal cavity. The formation of these hæmatic cysts in the first instance is involved in obscurity, but the explanation of their formation is probably the following: A Graafian follicle does not burst, as it should do, into the Fallopian tube; hæmorrhage takes place within it; it enlarges from continuance of the bleeding, and rupture occurs. I have occasionally found Graafian follicles pathologically increased in size, and containing very large clots. In certain blood diseases, hæmatic cysts of the ovary thus formed may probably attain a considerable size.

Hæmorrhage during Menstruation from the Graafian Follicle into the Peritoneal Cavity.—This class of cases is one of great interest. Normally, a certain amount of hæmorrhage—the “menstruation of the follicle,” as Dr. Tyler Smith has termed it—occurs before the dehiscence takes place. The transfer of the ovule from the cavity of the follicle to the canal of the Fallopian tube is attended probably with discharge also of some of the blood from the follicle into the tube. After dehiscence has occurred we find a coagulum of blood in the ruptured Graafian follicle—a coagulum ordinarily the size of a nut. Now it is evident that a derangement or disturbance of this physiological process may give rise to hæmorrhage into the peritoneal cavity. If the tube be not accurately applied to the follicle, the blood and ovule together may escape into the abdominal cavity—when the ovule has been fecundated such an accident may result, as the occurrence of cases of extra-uterine pregnancy proves—and if blood continue to be poured out from the interior of the follicle, the blood must either distend the follicle itself or escape into the peritoneal cavity. We have no means of knowing what is the normal amount of secretion of blood from the interior of the follicle. It

has been ordinarily assumed that the quantity is trifling. There is, however, no proof of this; and indeed there are very good reasons for believing, with Gallard, that ordinarily a not inconsiderable portion of the menstrual discharge itself is derived from the follicle,* which latter, as is rendered probable from the researches of Rouget, remains closely grasped by the fimbriæ during the whole period of menstruation. If this latter opinion be correct, it will be evident that, if from any accident the normal path for the follicular hæmorrhage—that is, the Fallopian tube—be not available, intra-peritoneal hæmorrhage will result. If the condition of the blood be such as to favor hæmorrhage—as in fevers, anæmia, chlorosis, purpura, etc.—the effects of such an accident are intensified.

The peri-uterine hæmatocele due to this case would be intra-peritoneal. The formation of an hæmatic ovarian cyst might precede the abdominal hæmorrhage.

Hæmorrhage from the Uterus and Fallopian Tubes into the Peritoneal Cavity.—When the menstrual product is prevented escaping by the normal outlet, by congenital absence of such outlet, or by acquired stricture or closure of the same, reflux of the blood may occur through the Fallopian tubes into the peritoneal cavity, and formation of a peri-uterine hæmatocele. This is a class of cases in illustration of which very considerable labor has been bestowed by Bernutz, in the work previously alluded to.

Whatever may lead to menstrual retention may end in pelvic hæmorrhage. In congenital cases of this kind the menstrual retention is associated with atresia of the cervix uteri, with absence of the vagina, or with imperforate hymen. In women who have menstruated, menstrual retention may occur from chronic inflammation of the cervix uteri closing the os uteri, or materially narrowing it; from traumatic influences during parturition, or otherwise; from cancer, etc. And there may be menstrual retention in cases where a slight menstrual discharge is apparently going on; the secretion of blood in the uterus may be so great that the os uteri is too small to allow of its escape. Hæmorrhage into the peritoneal cavity from the uterus and Fallopian tubes, one or both, may thus arise, either in connection with profuse menstruation or after parturition, or after

* See a memoir by Gallard, *Arch. Gén. de Méd.* Oct., Nov., and Dec., 1860.

abortion. [I have seen an immense intra-peritoneal hæmatocele produced by firmly tamponing the cervical canal to arrest a profuse metrorrhagia. The blood, unable to pass outward, regurgitated through the Fallopian tubes into the peritoneal cavity. The patient ultimately recovered.]

More commonly the peri-uterine hæmatocele originates at a menstrual period, the hæmorrhage being preceded by suppression or by profuse menstruation; it has almost always been noted that menstruation was previously irregular. There may or there may not be, concurrently with the internal hæmorrhage, an external one.

Rupture of the Fœtus containing Cyst in Extra-uterine Pregnancy.—The symptoms produced by the hæmorrhage which occurs under these circumstances are generally very severe. The blood is effused into the peritoneal cavity, often in great quantity.

The physical characters of the tumor produced by the effused blood resemble those observed in other cases. Frequently death occurs before the tumor has become developed and distinct. This rupture is most liable to occur when the fœtus is contained in the Fallopian tubes, and most frequently the accident happens between the second and fourth month under such circumstances.

Rupture of cyst of the broad ligament, as in a case recorded by Dr. M. A. Pallen.*

Rupture of the gravid uterus itself is one of the causes of intra-peritoneal hæmorrhage, though such an accident properly belongs to obstetrics. The blood found in the peritoneum would naturally collect in the retro uterine pouch under such circumstances.

Rupture of Hæmorrhoidal Veins.—Sir J. Y. Simpson mentions a case† in which a considerable tumor situated between the vagina and rectum consisted of a coagulum—the result of hæmorrhage from one of the hæmorrhoidal vessels.

Hæmorrhage from Vessels of the Peritoneum and Other Sources.—Bernutz‡ describes a form of hæmatocele resulting from hæmorrhagic pelvi-peritonitis. Ferber,§ Virchow,

* *Amer. Journ. of Obst.*, vol. ix., p. 69.

† "On Pelvic Hæmatoma."—*Med. Times and Gaz.*, vol. ii., 1859.

‡ *Op. cit.*

§ "Arch. f. Heilk." 1862, No. 5, p. 431.

Rockwitz, and Schroeder,* have, in reference to the general etiology of hæmatocele, drawn attention to the possibility of hæmorrhage occurring from the capillaries formed in the false membranes covering the pelvis viscera, the false membranes being the result of local inflammatory action. This hæmorrhage is analogous to that observed by Virchow in hæmatoma of the dura mater, in which case the blood is effused between successive layers of inflammatory membrane.

Here also may be mentioned the rare accident, *bursting of an aneurism* into the abdomen, the coagulum from which might be so situated as to give the physical characters of a peri-uterine hæmatocele.

Also, cases of the kind to which Dr. M'Clintock has drawn attention, and which, so far as at present known, are very rare, viz., the effusion of blood into the tissue of the uterus itself: the cervix uteri is the part affected. These cases occur only during, or immediately after, parturition.

Constitutional Causes of Peri-uterine Hæmatocele.—Any condition of the system at large favoring the production of hæmorrhage, may alone, or concurrently with some one of the causes already mentioned, give rise to peri-uterine hæmorrhage. Fevers, small-pox, etc., have in some recorded cases been associated with peri-uterine hæmatocele, the menstrual function becoming thus disturbed or disarranged in its performance. A watery condition of the blood, such as is present in anæmic individuals, chlorosis, purpura, or other blood disorders which may be considered as predisposing to the occurrence of hæmorrhage at a menstrual period, may, in the manner previously pointed out, be the cause of the peri-uterine hæmorrhage. Trousseau termed cases of this kind "cachectic" hæmatoceles.

Traumatic Causes.—It appears probable that in not a few cases peri-uterine hæmatocele is produced by actual laceration or stretching of vessels in the pelvis, the result of displacement of the uterus. That vessels do become lacerated is certain; that there are various diseases of the vessels in question which predispose to such rupture is well known. Although in some few cases the occurrence of the escape of the blood may occur without special exciting cause, it is yet the fact that in most cases unusual physical exertion of some kind has preceded the event, such exertion in fact as

* "New Syd. Soc. Year Book," 1869-70, p. 378.

would be likely to originate or intensify a displacement of the uterus. It is a clinical feature of such cases also that the accident is more liable to occur at the time of the menstrual period, or just before it or immediately after it.

Hæmatocele produced by Anteversion of the Uterus.—Not long since a case was under my observation in University College Hospital which suggested the above generalization. The patient was a cook having much standing and lifting to do. She became affected with peri-uterine hæmatocele. When the effusion had much diminished in size she was allowed to get up, but was again seized with pain, and it was then found that the uterus had become anteflexed, apparently as the result of the movement, and that there was a recurrence of the effusion of blood. After an interval of rest she was again allowed to get up, whereupon the same event as before was noticed, viz., pain, anteflexion, and further hæmorrhage. A pessary was applied before the patient was next allowed to get up, and there was no further hæmorrhage. In this case it seemed as if the stretching of the tissues at the posterior aspect of the uterus (where the effusion occurred), which resulted from the anteflexion, had given rise to laceration of vessels in that region, and that this was the explanation of the hæmorrhage.

RESULTS.

Absorption of the coagulum is the most common event, and this is the most favorable termination. In some cases the blood tumor bursts into adjacent viscera. The bowel is the outlet most commonly chosen, and the syrupy contents of the cavity then escape by stool, or flesh-like masses are passed in this manner from time to time, the tumor diminishing in size as this goes on. The tumor may burst into the vagina. It may burst also into the peritoneum, having been primarily either entirely extra-peritoneal, or else encysted in the peritoneal cavity. This latter termination is the most unfavorable, and it occurs more particularly in those cases where there is a recurrence of hæmorrhage.

DIAGNOSIS.

In cases of peri-uterine hæmatocele, a defined tumor, or a hardness, resistance, and dulness not well defined, may be found to extend upward a variable distance above the

brim of the pelvis. It may reach beyond the umbilicus. There is in such cases an effusion of blood, and this blood, at first fluid, afterward coagulated, forms the tumor. The history of such cases is peculiar: the formation of the swelling occurs quickly, is attended with alarming faintness and prostration, and with an assemblage of symptoms which have been already alluded to (see chapter on Menorrhagia). The physical characters of the tumor vary according to the stage at which the observation is made. Retention of urine, which may be produced by the condition in question, might possibly mask the true nature of the case; the distension of the bladder might, under such circumstances, disguise the other swelling.

One form of ovarian disease might be confounded with peri-uterine hæmatocele; thus, in one of an interesting series of cases, related by Dr. M'Clintock, the tumor due to the hæmatocele was for a time considered to be an ovarian tumor, into which hæmorrhage had occurred. The principal points to be borne in mind in the diagnosis of tumors suspected to be due to hæmatocele are, the sudden occurrence of the swelling the previous occurrence of marked menstrual disturbance of some kind, and the peculiar feel communicated by the tumor. The preceding menstrual symptoms are the least constantly significant.

The vaginal examination is very important. A tumor can generally be felt through the vaginal walls, and constituted by blood, or masses of blood-coagulum in various stages of transformation, and of very various size.

The tumor so constituted has, as a rule, the following general characteristics: Its form is rounded, it is tolerably well defined, may be hard or soft, according to circumstances presently to be pointed out; usually limited to one side of the pelvis—the posterior and lateral aspects more particularly; in some cases the tumor is felt to surround the uterus on all sides. The vaginal wall is pressed downward, and its canal thus encroached upon, according to the size and relations of the tumor.

The physical examination of the tumor, as effected by vaginal digital examination, may, or may not, enable us to arrive at a diagnosis of its nature, but the physical examination, the symptoms presented by the patient, and the history of the case, taken together, usually render the formation of a diagnosis comparatively easy.

The history is of most assistance in a doubtful case. The

tumor most resembles that produced by pelvic cellulitis; from it it is distinguished by the suddenness of its occurrence, by the absence of that hot, puffy condition of the vagina characteristic of the induration stage of pelvic cellulitis, by the absence of constitutional fever, and by the absence of the thickened brawn-like condition of the vaginal wall. The tenderness may be pretty nearly equal in both. [In the early stages of pelvic cellulitis, the tumor is more localized, more indurated, more closely attached to the uterus and its appendages, more sensitive to touch, and the temperature is always elevated.] In some cases, the hæmorrhagic effusion undergoes after a time suppuration, and the physical characters may then be identical with those of pelvic abscess. It will thus be seen that the diagnosis of hæmatocele from abscess is at first easy, but that it may be more difficult, later. From fibroid tumor, peri-uterine hæmatocele is distinguished by its want of uniformity and comparative want of solidity. The diagnosis of (unruptured) extra-uterine pregnancy, from peri-uterine hæmatocele, may be difficult in some cases, especially when a hæmorrhagic discharge is present. In extra-uterine pregnancy the uterus is enlarged, but enlargement, or at all events elongation, of the uterus may also be observed in hæmatocele (Duncan). If the case were one of suspected extra-uterine pregnancy at about four months, the absence of the general symptoms of hæmatocele would be confirmatory of the suspicion. Retroversion of the gravid uterus has been confounded with peri-uterine hæmatocele; but a careful consideration of the case should prevent a repetition of such an error.

Ovarian tumors in ordinary cases could not be mistaken for hæmatocele unless the ovarian cyst were in a state of inflammation, and the previous existence of the ovarian tumor unknown.

In the majority of cases the occurrence of the symptoms at a catamenial period, their instantaneousness, and the simultaneous appearance of a tumor rather soft or fluctuating, and of tolerably defined character, pressing on the vaginal walls—these, taken together, indicate a hæmorrhage in the neighborhood of the uterus. In those cases of peri-uterine hæmatocele, however, where the development of the tumor is more insidious, there being an absence of marked symptoms at the time of the occurrence of the effusion, the diagnosis is more difficult. In these latent

cases the effusion is at first slight, and the tumor slowly increases in size.

In doubtful cases, the use of the fine aspirating trochar is of great service in aiding the diagnosis under such circumstances. When the tumor is posterior, and we wish to ascertain the presence of fluctuation, we may with advantage make a double simultaneous examination from the rectum and the vagina. The diagnosis of cases of rupture of the fœtus-containing cyst in extra-uterine pregnancy from cases of peri-uterine hæmatocele, is by no means easy. In cases of rupture of the tube in Fallopian pregnancy, the diagnosis frequently rests chiefly on this, that the woman is known to be, or suspects herself to have been, pregnant. The attention of the attendant is likely to be diverted from the idea of pregnancy by the losses of blood which appear to be very frequently present in extra-uterine pregnancy, and which are erroneously looked on as evidence of menstruation.

Lastly, it must be recollected that an hæmatocele becomes sometimes converted into an abscess: when this is the case a careful investigation of the history and physical signs alone will indicate the actual state of things present.

TREATMENT.

When death occurs, it takes place usually either from hæmorrhage and collapse, or from peritoneal inflammation; the indications are, to arrest the hæmorrhage, to prevent inflammation, and, in certain cases, to promote external evacuation of the exuded products.

First, as regards the hæmorrhage. If the arrest of hæmorrhage be the chief indication, which will be judged of by the intensely pallid and faint state of the patient, our object should be to promote coagulation of blood already effused, and to check the flow of blood to the pelvic organs. One of the most important elements in the treatment, then, should be the observance of absolute rest in the horizontal position, not only during the attack itself, but between and during the succeeding menstrual period. Application of cold by means of bladders containing ice, placed over the pubes and the lower part of the abdomen, is of essential service. As a further help, the injection of iced water into the rectum might be suggested. The administration of food and drink requires careful consideration. If the pa-

tient were previously anæmic, or if there were reason to believe that the hæmorrhage was produced or kept up by the watery or vitiated character of the circulating fluid, a more liberal diet would be necessary; but under other circumstances, and during the acute stage, food and drink should be moderate in amount. For the relief of the great prostration and collapse present in many cases, brandy or other stimulants should be liberally administered. Internal remedies—hæmostatics, as they are termed—are of assistance in checking the hæmorrhage under these circumstances; iron, ergot, sulphuric acid, are preferable.

In cases of intra-peritoneal hæmorrhage so excessive as to actually threaten dissolution—as in cases of rupture of the fœtus-containing cyst in extra-uterine pregnancy, it becomes a question whether surgical means should not be employed for the arrest of the bleeding—*e.g.*, the abdomen to be opened as in the operation of ovariectomy, and the bleeding portions secured. There is no question that this method of treatment is justifiable and even necessary in the cases above supposed, the only difficulty being in making an exact diagnosis of the condition present. This operation will no doubt be performed, and death from hæmorrhage averted, when the diagnosis of such cases is better understood.

["Fallopian pregnancies, terminating in death by hæmorrhage from bursting of the Fallopian tube, a few weeks after conception, are not uncommon. Almost every practitioner of thirty years has seen such cases. One of the deputy-coroners of New York made necropsies in ten cases in five or six years. Four of my young friends died in this way. I saw one of them, with Dr. H. D. Nicoll, in New York, in 1874. The patient, aged 30, mother of two children, was taken suddenly at seven o'clock in the morning while dressing. Dr. Nicoll saw her in an hour. I saw her about 2 P.M. She was then in collapse. We had no doubt that she was dying of internal hæmorrhage. She died in twelve hours from the time of attack. The *post-mortem* examination showed the peritoneal cavity to be full of blood. If we had in time opened the abdominal cavity, it would have been easy to secure the bleeding Fallopian tube. But the golden moment for this had passed before we grasped the case in its entirety, and a valuable life was lost. With a sharp diagnosis, and prompt action, nothing would be easier, now, than to save life under these circumstances.

"The late Dr. Stephen Rogers of New York wrote an admirable monograph on Extra-uterine Fœtation, in 1867. He reviewed the subject in all its bearings, and said: 'To me, therefore, a correct diagnosis indicates as the first thing in order, the prevention of any further loss of blood; to accomplish which there is no choice of methods; *the peritoneal cavity must be opened; the bleeding vessels must be ligatured.*' Rogers's advice must become law for our future government."

The foregoing remarks are from a paper on gun-shot wounds of the abdomen read before the New York Academy of Medicine, October 6th, 1881, and published in the *British Medical Journal*, Dec., 1881, and January and February, 1882, by Dr. J. Marion Sims.]

The question as to the propriety of puncturing the tumor when such urgent symptoms are not present is one on which some difference of opinion exists; some practitioners advocating it, while others reject it, or limit it to those cases in which the effusion is not intra-peritoneal at all. As a rule, it is better to interfere surgically as little as possible, for, by making a puncture, there is fear of giving rise to inflammation of the interior of the sac, to purulent infection, and the fatal consequences of the same. Trousseau,* in an admirable clinical lecture on the subject, expressed himself as opposed to puncture. Professor Braun, of Vienna, states that in six cases where puncture and evacuation of the sac was performed, cure followed. In three cases he adopted a passive treatment, with like success.

Sir J. Y. Simpson recommended that an opening should be made, if the tumor be enlarging from inflammation or otherwise. Nélaton and Voisin limit surgical interference to cases where there is violent pain with increase in size, and threatened rupture into the peritoneal cavity.

The view taken of this question by Dr. Matthews Duncan is to the following effect: If the blood remain in form of clot, it is likely to be absorbed, and in such a case puncture is not required. When liquefaction occurs, Dr. Duncan believes that the blood becomes mixed with pus and is almost sure to be discharged, and in these cases operative interference may be required. The practitioner has then to determine whether he will leave the case to nature, or interfere; in some cases it is often good practice to open the

* *L'Union Méd.*, Dec., 1861.

sac, in others it is the only good practice. The operation is undertaken to avert a threatened rupture, or with the view of shortening and assuaging the sufferings of the patient. Dr. M'Clintock, who had had a considerable number of cases under his care, was opposed to the use of the trochar, unless urgent symptoms were manifested in consequence of the bulk or mechanical pressure of the tumor; and not even then, unless it were in the chronic stage.* Dr. Meadows argues in favor of operative interference in cases where the swelling is so great that the uterus is pushed against either sacrum or pubes, making both micturition and defæcation a matter of great difficulty, while the swelling rises considerably above the pelvic brim. He justifies his opinion by reference to the high mortality of Bernutz's cases. Dr. Barnes's views are more in accordance with those of Dr. Matthews Duncan. For my own part, in the cases, some twenty or twenty-five, of the more severe character, which have come under my notice, I have not once employed puncture, though in one case I was on the point of doing so. I have only met with one fatal case. It appears on the whole that a puncture carefully made, and so as to avoid risk of introduction of air, would in a severe case, shorten the duration of the malady, but, as a general rule, I am certainly decidedly opposed to puncture.

The difficulties of the operation are often not inconsiderable, and great care is required not to wound the bladder or other viscera. A sound should be passed into the bladder previously, in order to render evident the relation of this viscus to the tumor. In operating, the point which projects most into the vagina, and as nearly in the middle line as the nature of the case admits, should be chosen. The first opening made should be small, but when it is perfectly certain that the cavity is reached it should be enlarged. A large opening is necessary to allow of escape of clots. Care should be taken to prevent access of air to the cavity, and slight pressure should be afterward continuously applied over the abdomen. If pyæmic symptoms supervene, they must be treated by copious use of stimulants, by bark, ammonia, etc. Injection of the cyst with water is not to be recommended, unless the discharge has become putrescent.

With respect to those cases where the effusion extends high up into the abdomen, it may be a question whether to

* *Op. cit.*, p. 271.

perform an abdominal operation or not. In a case related by Dr. Duncan paracentesis was performed, and the patient recovered. Such an operation is only admissible in exceptional cases, and where the tumor is very large.

Next, with reference to the peritonitis. The great pain in these cases is of itself an evil, and it must be treated by opium in sufficiently large doses. Poultices and warmth, so useful in ordinary peritonitis, would seem absolutely contra-indicated, inasmuch as the hæmorrhage would be probably increased by their use.

The subsequent management of the patient will require caution. Everything calculated to give rise to excitement or congestion of the genital organs must be avoided. The patient must be enjoined not to take excessive exercise, to live moderately, but well. The anæmic condition generally indicates the employment of tonics, of ferruginous preparations, etc., care being taken, while restoring the strength of the patient, to prevent premature exercise of this strength. Sexual intercourse could not with propriety be allowed until after the lapse of some months at least. A patient who has once been the subject of peri-uterine hæmatocele requires continuous and careful watching for a considerable period; exertion of any kind, however slight in degree, may induce recurrence of the mischief, if undertaken too early. I have witnessed one case, that of an hospital patient, who was the subject of the affection three times, at intervals tolerably widely separated.

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CHAPTER XLI.

PELVIC CELLULITIS, PELVIC PERITONITIS, AND PELVIC ABSCESS.

Peri-uterine Inflammation; its Frequency, Nature, and Seat—Progress and Route taken by the Effused Products—Symptoms and Effects of Pelvic Cellulitis.

DIAGNOSIS.

Seat of Intra-pelvic Inflammatory Affections—Question of Intra- or Extra-peritoneal discussed—Anatomy of Douglas Pouch—Perimetritis and Pelvic Peritonitis.

PELVIC CELLULITIS.—Course of Effusion, Resolution or Conversion into an Abscess—Causes—History.

PELVIC ABSCESS.

PELVIC PERITONITIS.—Typical Severe Cases—Chronic Cases.

TREATMENT.—Great Necessity for Rest—Medicines—Diet—Evacuation of the Abscess.

The affections classed under the above headings are of great importance and interest. These affections, moreover, may be said to be peculiar to the female sex. They are not unfrequently masked or unrecognized until an advanced period of their progress, and the consequences are frequently in the highest sense of the word serious.

The affections here to be described are marked by occurrence of effusion of morbid products into the space surrounding the uterus and ovaries, and by the transformations undergone by these effused matters, one of which is the conversion of the products in question into a purulent or puriform fluid. Tumors of varying shapes and consistence are found in the progress of such cases, situated generally not far from the uterus and interposed between it and one side or other of the pelvic wall. These tumors appear rapidly, remain generally for a considerable time, and disappear either owing to gradual absorption of the material of which they are composed, or by liquefaction and bursting of the tumor at the surface of the skin, or into the peritoneal cavity, intestines, or bladder.

The effusions appear to be, frequently at all events, the result of the introduction of an irritant from without. They are frequently witnessed during the puerperal state, after delivery at term, or after miscarriages; may result from operations on the internal or external generative or-

gans, from the introduction of a tent into the uterine cervix, or from the performance of a severe operation such as ovariectomy, or from a simple operation such as the removal of condylomata from the labia. These affections can hardly be said to be idiopathic.

There has been at various times much discussion as to the comparative frequency of intra-peritoneal and extra-peritoneal pelvic effusion, and it is remarkable that observers as a rule class themselves very decidedly as partisans of an almost exclusive view, the smaller number of authorities being those who admit a more equal distribution of the cases under one or other of the two categories.

FIG. 164.*



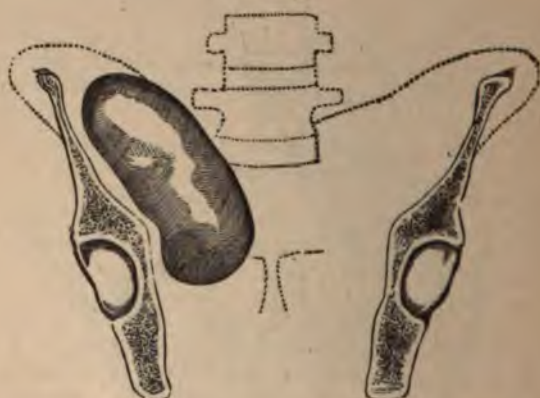
Thus, on the one hand, we have authorities who contend that in the large majority of cases where inflammatory effusions occur in the pelvis the peritoneum is its actual seat; "pelvic peritonitis" or "pelvi-peritonitis" being the designation employed.

On the other hand, by many the seat of the effusion is believed to be in the majority of instances the cellular or connective tissue outside the peritoneum.

* Fig. 164 shows outline of the effusion (to the right of the uterus) in a case in University College Hospital.

It might be supposed that it would be easy to determine the point in dispute by clinical observations, but in point of fact the determination is not easy. Very many of the cases recover and no *post-mortem* evidence is in such instances forthcoming; and it by no means follows that because *post-mortem* examination reveals the presence of pelvic peritonitis in some of the fatal cases, or even that it does so in the majority of cases when *post mortems* have been obtained, these results do not by any means necessarily prove that in the non-fatal cases, which constitute the actual majority, the seat of the effusion is also intra-peritoneal.

FIG. 165.*



One of the points bearing on the decision of the question is an anatomical one, viz., the extent to which the Douglas pouch extends normally downward behind the vagina. Thus Dr. R. B. Maury points out that, in common with some other writers on the subject, I have in the former edition of this work represented the Douglas pouch incorrectly, and that it really extends much lower than I have represented it. I am free to confess that the concurrence of testimony—that of the late Dr. Phillips, that of Mr. Spencer Wells, and others—is in favor of Dr. Maury's view on this particular point, and in the new drawings introduced into the present edition the Douglas pouch is repre-

* Fig. 165 represents the outline of the effusion as imagined to be seen from the front. From the same case as that of Fig. 164.

sented in conformity with the conclusions just stated (see p. 194). Thus, in some cases where effusion is found low down behind the vagina there is certainly a possibility—a possibility greater than was previously supposed—that the effusion may be intra-peritoneal. (Analogically the same reasoning applies to the question as to the seat of hæmorrhages in this locality.

The result of my own observations has been the conclusion that the larger number of cases of so-called pelvic inflammation are cases in which the seat of the effusion is outside the peritoneum, and that the term "pelvic cellulitis" is strictly appropriate. Dr. Matthews Duncan, following Virchow in his nosology, would term these cases of "parametritis." Dr. Priestley,* who has written a very complete account of the subject, prefers the term "pelvic cellulitis." In common with several other distinguished authorities Dr. Priestley appears to regard pelvic cellulitis as the more generally present condition. Dr. Emmet regards cellulitis as most common. Dr. Thomas considers that peri-uterine cellulitis is rare in non-pregnant women, while in such cases pelvic peritonitis is common. The chief authority on the opposite side is Bernutz, followed by Dr. Tilt and Dr. Meadows in this country; these latter authorities regard pelvic peritonitis as the more common affection.

It is not to be disputed that *post-mortem* evidence and the results of physical examination during life in certain cases is in favor of the occurrence of pelvic peritonitic exudations, effusions, contractions, and adhesions resulting therefrom in perhaps a considerable number of instances. And it is to be conceded also that pelvic peritonitis may occur as an independent and sole condition.

It appears, judging from the facts and opinions of those who chiefly advocate the pelvic peritonitis view—Bernutz, for instance—that in a considerable number of cases of pelvic peritonitis the influence of gonorrhœa is to be traced. Looking at the analogy between the testicle and the ovary, it would not be surprising that the ovary and its peritoneal covering should be inflamed in cases of gonorrhœa. Dr. Thomas appears to take this view of the matter.

Certain facts which have come under my own notice would lead me to the conclusion that pelvic peritonitis,

* "Reynolds's System of Medicine," vol. x.

with effusion more or less, is liable to be witnessed in cases of gonorrhœal origin.

In drawing any general conclusion from the facts recorded by various observers regard must be had probably to the locality where the observations were made. For instance, it appears from the remarks of Dr. Emmet that pelvic inflammation is liable to occur in patients treated in New York to a degree and with a frequency which does not appear to be observed in London. And it may be that the supposed greater frequency of pelvic peritonitis in Paris is due to climatic or local peculiarities. Possibly also to the greater influence or greater frequency of the gonorrhœal element in one place rather than another. One possible result of pelvic inflammation is the formation of pus; and thus originates what is termed "pelvic abscess."

PELVIC CELLULITIS.

The first result observed in cases of pelvic cellulitis is the occurrence of an effusion which quickly assumes a certain degree of hardness to the touch, and later on becomes very hard. This hardness of the effused material was first described by Doherty, and it is a now well-recognized physical attribute of these effusions. The effusion may be slight in extent or more diffuse and extensive. It would seem that in some cases it is of a transitory character, constituting a sort of œdema, which may undergo rather rapid absorption; but in most cases it persists, the hardness increases, perhaps the effusion extends and becomes more considerable. Dr. West describes it as "acute purulent œdema." Virchow, who has specially examined the effused products, describes it under the term "diffuse puerperal metritis and parametritis;" the tissues become swollen, thickened, hardened, and œdematous, and a fluid, first transparent, then opaque, exudes on section. The cells are enlarged, their contents thicker; they split up, and groups of smaller roundish granular cells are seen. As further consequences, there may occur coagulation and obstruction in the lymphatics there situated, and metamorphosis into purulent fluid.

The seat of the effusion now under consideration is the areolar tissue near the uterus; most commonly it is on the lateral aspects of the uterus, between the folds of the broad ligament, but it may be situated in front of the uterus or

behind it. It is more particularly concerning the cases when the effusion occurs *behind* the uterus that it is doubtful whether or not most of such cases are not really cases of pelvic cellulitis.

Once started, the effusion may spread to a considerable distance in the pelvis, and even beyond it. The spread of the effusion follows, however, certain definite paths, the fasciæ of the pelvis being so arranged that extension necessarily occurs in these definite directions. König* gives the result of some interesting experiments on this subject, made on bodies of women dying after labor. Injections of air or water were made into the cellular tissue under the broad ligament. The results were—1. Exudation into the cellular tissue in the neighborhood of the tubes and ovary travels primarily along the course of the psoas and iliacus muscles, and then travels into the pelvis proper. 2. Exudations starting from the antero-lateral part of the cellular tissue, where the body of the uterus joins the cervix, fill first the cellular tissue of the true pelvis laterally, to uterus and bladder, and pass then with the round ligament toward Poupert's ligament, and thence to the iliac fossa externally and backward. 3. Starting from the posterior part of the base of the lateral ligament, the parts first filled are the posterior and lateral parts of the pelvis—viz., the Douglas fossa; and the exudation then follows the course of those described under head 1. The effusion may, as I have myself observed, pass also out of the pelvis through the large or small sacro-sciatic notch. It may also pass across the pelvis in front of the bladder from one side to the other, and once above the pelvic brim it may extend to a very considerable distance upward, dissecting the peritoneum away from the abdominal fascia and inserting itself between. The effusion, when large, displaces the uterus toward the opposite side of the pelvis. When at all considerable it appears to be inseparable from the pelvic wall, but its boundary in other directions is generally well marked. The surface, which can be felt, has a rounded smooth character.

When the effusion is posterior it forms a large tumor, which may push the uterus far forward close to the symphysis, and it extends downward toward the vulva, behind the vagina. It is in reference to these particular cases that

* "Archiv f. Heilkunde," 1862, No. 6, p. 481.

there is doubt whether the effusion is not really in the peritoneum in some instances.

The effusion, having become hard remains for a period, generally several days at least, and then undergoes absorption, becoming insensibly melted down, *or it is converted into an abscess*. When the conversion into pus occurs the fluid thus formed discharges itself by bursting into the vagina, into the bladder, into the rectum, and sometimes into the peritoneum, or passes out of the pelvis altogether to the groin, the iliac region, or the gluteal region, or down the inner side of the thigh, forming an evident external swelling, which either breaks or disappears. The formation of an external swelling does not necessarily indicate the presence of an abscess, for the effusion may so extend outward, without transformation into pus, as a necessary consequence. And, after all, bursting, when it does occur, may happen internally without formation of any external aperture. Dr. M'Clintock found that in 70 cases of pelvic cellulitis, of puerperal origin, the case ended thus: 37 ended in suppuration with discharge of pus; 24 of these burst or were opened externally—viz., 20 in the iliac region, 2 above the pubes, 1 in the inguinal region, and 1 beside the anus; 6 were discharged *per vaginam*, 5 by the anus, and 2 burst in the bladder. In not one of these puerperal cases did the abscess burst into the peritoneal cavity, while this result was several times observed in a much smaller number of non-puerperal cases. Dr. West states that, in 34 out of 52 cases, the broad ligament was the seat of mischief, the cellular tissue between the uterus and rectum in 14 cases, and that between the uterus and bladder in 3 cases. Pus was discharged externally in 27 of these 52 cases.

The time occupied by the appearance, continuance, and disappearance of the effusion may, and often is, very considerable, spreading over many weeks in not a few cases, and in some cases months are occupied. When pus has once formed the course of the disease may be very chronic, and when, as sometimes happens, the cavity communicates with the bladder or the rectum, the aperture assumes a fistulous character, and great difficulty is experienced in completely draining and closing it. A like difficulty is sometimes met with when the abscess burrows between the muscles of the thigh.

Causes.—Many cases of pelvic cellulitis occur after parturition, and under these circumstances they appear to be

due either to an injury of the uterus during the parturition—*e.g.*, laceration of the cervix—or to taking a chill; or to be connected with some movement or premature exertion on the part of the patient. The manner in which the affection shows itself, and the circumstances of the case, generally give the notion that the exciting cause is the passage of a septic material into the blood-vessels, or possibly the lymphatics, one or both, and that this is the cause of the effusion. An injury or abrasion of the os uteri is the probable place of entry of such septic material in some cases; in others it may be the imperfectly closed vessels at the placental site. In several cases I have observed, the attack was very distinctly produced by premature physical exertion which it may be supposed led to septic absorption by deranging the contraction of the uterus, or by dislodging coagula from imperfectly closed sinuses of the uterus. It does not appear to me that chills are so often the cause of post-puerperal pelvic cellulitis as has been supposed, though it cannot be denied that cellulitis appears due to chills or external application of cold in some cases.

Bruising or laceration of the cervix uteri appear to be the most common causes of pelvic cellulitis.

The *history* of cases of pelvic cellulitis, of which those following delivery may be taken as typical ones, is generally characteristic. Rigors, pain more or less intense, quick pulse, irritative fever, mark the onset of the inflammatory action; but these initial symptoms may be absent, the patient gradually becoming indisposed, without occurrence of acute symptoms of any kind. Thus it is not uncommon for a patient, who may have got over the period of lying-in tolerably well, to evince three or four weeks later symptoms of general indisposition; she becomes weaker and weaker; she is emaciated, complains of pain down the legs, or in the pelvis; the appetite and digestion fail; there are occasional chills; and after these symptoms have lasted a week or two, the more decided pelvic symptoms—difficulty and pain in defæcation and micturition—are evident. If movement be attempted, pain is produced: this may be taken to be due to mere weakness, the real mischief being overlooked. A quick pulse is, however, always present from the beginning. When we are called to the case at a somewhat later period, we usually find that there has been a good deal of pelvic pain and uneasiness, pain and difficulty in micturition and defæcation, high fever, temperature running up to

102° or 103°, with evening exacerbations, night-sweats, hectic, diarrhœa, and all the signs of violent and dangerous constitutional disturbance; and the presence of the tumor now alluded to is perhaps the last thing which is detected. These symptoms may, however, be absent. The tumor is not always painful when touched, though the vagina as a whole is tender and hot to the touch; the vaginal wall covering it is thickened, indurated, and conveying a very different impression from that which is present when a tumor of another kind simply presses on the vaginal wall, and is not connected to it by inflammatory exudation, etc.; at the latter stage of the affection tenderness may be absent, or at all events be much diminished. The hardness of the tumor has been already alluded to as a remarkable feature. In a later period it gives place to softness and fluctuation when undergoing liquefaction, but softness does not, according to my experience, precede resolution.

Neuralgic pains are frequently present, due to pressure of the effused products on the nerves passing through the pelvis. These neuralgic symptoms vary; they are either a sensation of coldness, or increased warmth of the surfaces to which the nerve leads, an intense pain, or other altered sensation. König observes truly, that the external cutaneous nerve of the thigh is the one most frequently affected; at other times the crural nerve chiefly, or the sciatic nerve. One symptom is very frequently present, viz., flexion of the thigh on the trunk; the patient experiences pain when the thigh is extended, owing to the distension around the psoas muscle, and which is necessarily increased by extension. The sign in question is almost pathognomonic of pelvic cellulitis or abscess. Pelvic cellulitis may, however, be unaccompanied by this symptom, for when the mischief is in the anterior part of the pelvis, or in such position as to be out of the way of the psoas and iliacus muscle it may be found wanting. This distinction I have been able to make in several instances.

Other symptoms attendant on pelvic cellulitis and abscess are—vesical catarrh, indicative of proximity to the bladder; rectal disorders; passage of bloody mucus and tenesmus, anomalies of defæcation and micturition, these functions being generally more or less interfered with.

PELVIC ABSCESS.

It not unfrequently happens that the first indication of pelvic exudation is the escape of pus from the vagina or from the rectum. In some cases the transformation into pus proceeds very rapidly, while in others it occupies much time. Acuteness of the symptoms—that is to say, severity of pain, great elevation of pulse and temperature—generally indicate pus formation. But not always. When the pain is severe and the pulse and temperature high, the bursting of the abscess is generally imminent.

The diagnosis of pelvic abscess from pelvic cellulitis is not always easy; the presence of fluctuation is a help in some cases, particularly when the abscess has made its way to the surface of the skin in the groin or elsewhere. In some cases of pelvic abscess, whether resulting from pelvic cellulitis or from pelvic peritonitis, there is a liability to the occurrence of *septicæmia*; and the course of such cases is often fatal. Absorption of septic material into the general blood-current happens more generally when the abscess has made for itself an opening, or when it has been punctured for the purpose of evacuating it. When *septicæmia* results there may be a quickly fatal termination, or the disease may assume a more chronic form.

The rapidity with which pelvic cellulitis changes into pelvic abscess varies in different cases. I have known an abscess to form in as short a time as three days, and be evacuated spontaneously on the fifth. Usually the formation of pus occurs much more slowly than this.

PELVIC PERITONITIS.

The differences of opinion entertained by various authors as to the frequency of this condition has been already adverted to. It seems certain that plastic exudation may occur in the pelvis amid the ovaries, one or both; also that serous exudation may occur in the pelvis, and that this serous exudation may become encysted by adhesions forming superiorly and shutting it off from the general peritoneal cavity;* also that exudation, quickly assuming a

* Thus, Dr. Matthews Duncan has called attention to certain interesting cases in which large accumulations of a serous fluid have been found behind the uterus, resulting probably from local peritonitis (*perimetritis*). The cavity enclosing the fluid is supposed to be separated from the gen-

puriform character, may form in the pelvis and constitute a tumor of considerable size behind the uterus in the Douglas pouch and in the parts above this, and that this puriform collection may be limited to the pelvis by adhesions formed superiorly. Further, it appears that the large tumor so formed may burst into the general peritoneal cavity or elsewhere.

The typical severe case is that arising from septic action at the internal uterine surface. For instance, a sponge tent is introduced, allowed to remain too long or otherwise mismanaged, and acute peritonitis is set up together with metritis; a puriform fluid is formed in the pelvis, and the uterus becomes covered by a layer of plastic lymph. Another type of case is that in which the *gonorrhœal inflammation* seizes on the peritoneum covering the ovary on one side or both, and exudation occurs in the pelvic cavity. Bernutz stated that nearly a third of cases observed by him were gonorrhœal in origin.

There are probably several other ways in which pelvic peritonitis originates—*e.g.*, menstrual derangements of various kinds, venereal excesses and traumatic causes.

Pelvic peritonitis apparently differs from pelvic cellulitis chiefly in the fact that the affection is situated more in the middle line and behind the uterus in the former than in the latter; and it is believed by some good authorities that a very large tumor situated behind the uterus in a median position must necessarily be due to pelvic cellulitis.

There appear to be no other very decided points of difference between pelvic cellulitis and pelvic peritonitis other than those—admitting their validity—which have been mentioned. The constitutional and local effects seem to be very much alike in both classes of cases. The symptoms would, on the whole, be expected to be more acute in cases of pelvic peritonitis, and the gravity of the case would be proportionately greater also.

eral peritoneal cavity by adhesions. In one case as much as eight ounces, in another nine, were drawn off by a trochar, the perforation being made at the back of the vagina. Dr. Duncan contends that the supposed cures of ovarian dropsy after rupture of the cyst into the abdomen are probably cases of this kind. There are difficulties in accepting the latter explanation, the magnitude of the tumor in some of the cases of ovarian cyst rupture being infinitely greater than any case Dr. Duncan brings forward of peritoneal serous cyst. I have myself witnessed a case in University College Hospital where an autopsy proved it to be one precisely of the kind here described.

It seems probable that in some cases pelvic cellulitis becomes complicated subsequently with pelvic peritonitis. Such complication would render the discrimination of the precise seat of the affection additionally difficult.

Certain effects liable to be produced by pelvic peritonitis are very important. Thus, exudations on the peritoneal surface of the ovaries may seriously injure the ovary as a gland, and interfere with the proper discharge of ova afterward in cases where the course of the disease is chronic, or where the peritonitic exudation becomes contracted in such way that unnatural adhesions occur between the surface of

FIG. 166.



the ovary and the pelvic wall. The Fallopian tubes also may become fixed to adjacent parts in such way as to interfere with their proper action. Again, the peritoneal surface of the uterus may become adherent to the ovary or to the pelvic wall as a result of the pelvic peritonitis. Doubtless some cases of sterility are cases where peritonitic adhesions and thick false membranes have tied down the organs and crippled their proper action.

DIAGNOSIS.

Cases of pelvic cellulitis, pelvic peritonitis, and pelvic abscess may be classed together for diagnostic purposes.

When an enlargement of the lower part of the abdomen is observed in a woman who has been delivered recently, who has recently had an abortion, or who has been the sub-

ject of an operation involving the generative organs, the formation and development of the tumor having been attended with inflammatory symptoms, tenderness, feverishness, etc., the existence of pelvic inflammatory exudation is to be suspected.

The diagnosis is usually easy. The tumor formed in the pelvis may rise above this cavity, and be perceivable in one or other groin, or even considerably higher; or it may form a tumor, rising in the middle line above the pubes. Its limitation is made by palpation and percussion. The skin covering the tumor may become red and inflamed, when

FIG. 167.



evacuation of an abscess is to occur through the abdominal wall. The abscess may, however, burst into the vagina, or into the bladder, rectum, etc.

The iliac regions should be carefully and daily examined by the hand, in all cases of convalescence after uterine inflammation, or when the patient had been subjected to the operation of causes tending to produce pelvic abscess. Tenderness on pressure, continuous uneasiness, and febrile symptoms indicate probability of existence of cellulitis. The vagina should be carefully examined by the finger, and resistance or localized hardness may then be found to be present.

There are other conditions capable of giving rise to abscess, which abscess may present at some portion of the abdominal wall, above the groin, or in the middle of the

abdomen. In some rare instances these conditions might be confounded with pelvic abscesses of the more ordinary kind.

Abscess in the iliac region may be due to caries of the vertebral column; abscess above Poupart's ligament on the right side may be due to inflammation or obstruction of the appendix vermiformis. In cases of retained encysted fœtus, suppuration, formation of abscess, and spontaneous discharge of the contents through the abdominal wall, are frequently observed. In this latter event there would be a

FIG. 168.*



history of peculiar character. Ovarian tumors sometimes suppurate, and the resulting abscess opens externally.

The condition with which ordinary pelvic cellulitis is more likely to be confounded is peri-uterine hæmatocele. The two accompanying figures exhibit the similarity of outline of the tumor in the two cases. Fig. 166 represents the shape of the abdominal tumor in a case of peri-uterine

* Fig. 168 represents the contour of the hard rounded tumor as felt from the vagina. Fig. 169 (on p. 204) represents the contour as supposed to be viewed from the front. Their outlines illustrate a case in University College Hospital.

hæmatocele.* Fig. 167 gives an idea of the tumor in a case of pelvic cellulitis.† The resemblance between the two as regards the configuration of the tumor is obvious. [The *lateral* aspect of the tumor in these two cases respectively is shown in Figs. 168 and 169.] In both the tumor rises from below, and in both cases the margin of the tumor is rounded, generally rising higher on one side, presenting variations in hardness and resistance, and softness and fluctuation, according to the stage of the affection. And it now and then happens that the contents of the hæmatocele undergo a process of suppuration, the hæmatocele becoming converted into an abscess.

FIG. 169.



The tumor due to peri-uterine hæmatocele forms rapidly, that due to pelvic cellulitis slowly: this is the principal distinction.

The general symptoms are marked. The fixed pain in the pelvis, generally on one side; the tenderness on pressure above Poupart's ligament over the brim of the pelvis—a sign rarely absent; the tenderness on vaginal examination; the flexion of the thigh on the trunk on the affected side; the general disturbance, manifested in feverishness, inappetency, hectic, frequent pulse, prostration, gastric disturbance, etc., the occurrence of rigors, or a feeling of cold-

* Case of Owen, Univ. Coll. Hospital, 1866.

† Case of Parnell, Univ. Coll. Hospital, 1866.

ness at the onset of the affection; the pressure signs;—these are the most characteristic indications.

The vaginal examination is of great importance. The tumor perceived by the finger is generally hard, identified as it were with the pelvic wall, often inseparable from the uterus, situated at one side or in front of the uterus, and partly behind it, or chiefly in the middle line posteriorly. It is reached with some little difficulty when the effusion occupies the brim of the pelvis, but even then a careful examination will enable the observer to define its lower border. An abdominal examination will render evident its outline superiorly.

In the first stage the tumor is hard—when liquefaction has occurred fluctuation may be evident.

There are some affections with which pelvic abscess may be confounded—peri-uterine hæmatocele, extra-uterine pregnancy, ovarian tumors of rapid growth (as in a case referred to by König), or which have become the seat of inflammation (M'Clintock). The history of the case is exceedingly important in reference to the diagnosis. Chronic cases of peri-uterine hæmatocele, where the tumor undergoes a process of liquefaction, offer, so far as the physical characters are concerned, most resemblance to cases of pelvic abscess. Careful scrutiny of the facts relating to the development of the tumor, of the attendant symptoms, and the result of abdominal examination will afford means for deciding the question. (See chapter on Hæmatocele, p. 169.)

In cases where retroflexion of the uterus exists it sometimes happens that pelvic cellulitis, or even pelvic peritonitis, is present as a complication. Here there would be a large tumor, constituted by the much-congested uterus, perhaps fixed by exudation around it. The sound would render the diagnosis of such a case easy. Malignant tumors could hardly be confounded with the tumor produced by pelvic cellulitis or pelvic peritonitis.

TREATMENT.

For practical purposes the remarks concerning treatment of pelvic cellulitis, pelvic peritonitis, and pelvic abscess may be made collectively, for, although technically different, they must be regarded, so far as treatment is concerned, from pretty much the same point of view,

We have to do with what may be considered, if I am not mistaken, as a local septicæmic action in most of these cases. The general indications are to prevent further advance of the inflammation or irritating action, to promote the resolution and absorption of the effused products, to promote the escape of purulent collections when such have formed, to sustain the strength of the patient while battling against the depressing influence of the affection, to relieve pain, to assist the action of the bowels, and, generally, to do what seems required to promote the restoration of health.

Rest, in bed, is absolutely required. Nothing, perhaps, is more important than this. And it is even advisable, in most cases, that the patient should not be allowed to move from the horizontal position for any purpose. Cases are often unduly protracted from want of attention to this precaution. This applies in all cases, whether there be simple cellulitis, or pelvic peritonitis, or abscess. It is in some cases very useful to place a pillow, or double inclined plane well cushioned, under the knees, to relax the psoas and iliacus muscles.

Rest must be continued for some time, even days after the patient is feeling better. The malady is very tedious, and has a great tendency to recur. If the patient is allowed too soon to sit up, it is almost certain there will be fresh inflammation, exudation, and elevation of temperature.

When abscess exists, or has been opened on the surface, the position of the patient should be such as to favor escape of the fluid contents.

Pain requires to be treated by soothing remedies. Vaginal injections of water, temperature 100° to 105° , are very grateful to the patient, and may be used twice a day. Hot fomentations, or linseed-meal poultices, are often applied to the hypogastric region. Morphia suppositories or laudanum may be placed in the rectum to relieve pain and discomfort and sleeplessness.

The bowels require careful attention. One of two plans I have generally employed—either to give a small dose of castor-oil regularly every other day, or to order an enema of tepid water every second day. Collections of fæces are liable to occur and give great discomfort. The room should be kept moderately warm— 60° . The whole body should be sponged once a day with warm water, this being carefully done so as not to chill the patient.

The diet should be liberal. Most patients are weakly and prostrated, and there is reason to believe that this is an initial condition, and that, had it not been for the general weakness, the patient would not, in the majority of cases, have become affected with the cellulitis. Hence, careful nourishment is required. The appetite is almost always very indifferent. For food, eggs, soups, Brand's essence of beef, Valentine's meat juice, beef-tea, and milk are suitable at first. They must be given frequently, in small doses at a time. A little champagne or weak brandy and water are often of service. If an abscess exist, and it is in process of discharging, the patient may require what seems a very large quantity of nourishment and stimulants. When it can be given, meat may be administered a little at a time. The feeding of the patient in a case of cellulitis, or abscess, is a matter of quite first-rate importance, and I have several times observed a most marked improvement to set in from the date on which particular attention had been devoted to it. Care must be taken to give food at night—a matter often neglected.

Quinine alone, or with iron, is often required; dilute nitro-hydrochloric acid and bark is a good combination also in many cases. Later on in the case iodide of iron is a good medicine.

The question as to the evacuation of the abscess, when such is present, is an important one. The natural evacuation is undoubtedly the best, unless this is procured at the expense of permanent disorganization of the pelvic viscera; but it is certain that in some cases artificial evacuation hastens the cure very materially. The selection of the time and place for puncture—if early puncture be decided on—requires great judgment. If the abscess be opened from the vagina, extreme care is necessary to avoid wounding the pelvic viscera; a soft point may be chosen for the puncture, if there be no actual pointing of the abscess. Dr. M'Clinckock believes that those cases end most favorably which are evacuated externally. Where the abscess points at some part of the abdominal wall, it is better to wait until the skin is thoroughly implicated. If a puncture be made from above, it should be made as near to the pelvic brim as possible, in order to avoid the peritoneum, and if the swelling extend far out toward the iliac region, the puncture should be made close to Poupart's ligament; to avoid the sheath of the crural vessels, the puncture should be made

external to the surface of Poupart's ligament. The aspirator is now frequently employed instead of the bistoury for opening the abscess. When fluctuation is clearly evident, the operation is devoid of uncertainty, but under other circumstances there is risk of missing the abscess altogether. Unless, therefore, the position of the abscess be otherwise than by fluctuation distinctly indicated, it would be better to wait than to operate early, although by so waiting some time would be lost. The Listerian antiseptic method of operating possesses very great advantage in such cases, and I have employed it with great success. A compress of cotton-wool should be afterward lightly applied over the whole hypogastric region.

Mercurial inunctions, recommended in chronic cases, appear objectionable. Iodide of potassium ointment is very suitable and serviceable. Painting the lower part of the abdomen with strong iodine (liq. iodi) appears of great service where induration remains, and it is desirable to remove it. When the abscess burrows in the thigh, strapping of the thigh will prove useful, the foot and leg being previously bandaged.

[Pelvic cellulitis usually runs its course in three weeks. Sometimes it is prolonged to four, five, and even six weeks. It generally terminates by resolution and then it seldom lasts more than twenty-one days. If it result in abscess, which is known by sensations of chilliness and rise of temperature, the sooner the matter is evacuated the better, and we should early search for its "pointing" in the direction of the vagina, and whenever we can detect the smallest point of fluctuation we should resort to the aspirateur. Sometimes it is necessary to repeat the aspiration, and again it is imperative to make a larger opening with a knife so as to insure free drainage. But cases occur in which the matter does not make its way out through the vagina, or the rectum, and then it may be necessary to open it by abdominal section. The late Dr. Brickell, of New Orleans, insisted upon an early use of the aspirateur in this disease, and he gave histories of many cases where the swelling seemed to be very hard and inelastic, and yet when he used the aspirateur he was successful in evacuating small quantities of pus which immediately gave relief to every symptom of blood poisoning. Sometimes the abscess discharges by the vagina or rectum by a tortuous channel, and there is imperfect drainage from a cavity which cannot

be reached and cannot be thoroughly evacuated, and it often seems that the patient must die from pyæmia and exhaustion. In these cases Lawson Tait cuts down upon the abscess through the abdominal walls after locating its situation exactly. He removes the pus by aspiration, then opens the sac and attaches it to the walls of the abdomen in the same manner as my father recommends in cholécystotomy. Then he introduces a drainage tube; the cavity is thereby constantly evacuated and cleansed, and heals up very rapidly. He has reported twelve cases of this sort where life seemed to have been snatched, as it were, from the jaws of death, and every case was successful.]

The treatment of pelvic peritonitis must be conducted on the same principles as those recommended in pelvic cellulitis. In all cases when pelvic inflammation has existed there appears to be a great tendency for the malady to be reproduced, unless great care be taken of the patient during convalescence. The impatience of the sufferer frequently prompts her to leave the bed before the cure is sufficiently advanced, and it is generally necessary to insist on the maintenance of the recumbent position for a fortnight or so after all pain and local inconvenience have ceased.

In some cases the malady is very protracted, and, spite of good treatment, the powers are so low that no substantial advance is made. Change of room is occasionally advisable under these circumstances.

SEXUAL NEURASTHENIA

(NERVOUS EXHAUSTION.)

Its Hygiene, Causes, Symptoms and Treatment,

WITH A CHAPTER ON

Diet for the Nervous,

BY GEORGE M. BEARD, A.M., M.D.,

Formerly Lecturer on Nervous Diseases in the University of the City of New York;
Fellow of the New York Academy of Medicine; Author of "Our
Home Physician," "Hay Fever," one of the Authors of
"Medical and Surgical Electricity," etc.

[POSTHUMOUS MANUSCRIPT.]

EDITED BY A. D. ROCKWELL, A.M., M.D.

Fellow of the New York Academy of Medicine, and Electro-Therapeutist to the
N. Y. State Woman's Hospital; one of the Authors of "Medical
and Surgical Electricity," etc.

The philosophy of this work is based on the theory that there is a special and very important and very frequent clinical variety of neurasthenia (nervous exhaustion) to which the term sexual neurasthenia (sexual exhaustion) may properly be applied.

While this variety may be and often is involved as cause or effect or coincident with other varieties—exhaustion of the brain, of the spine, of the stomach and digestive system—yet in its full development it can be and should be differentiated from hysteria, simple hypochondria, insanity, and various organic diseases of the nervous system, with all of which it had until lately been confounded.

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